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ABSTRACT

The achievement of four groups of children as measured by the Stanford Achievement Test was compared at the end of the first, second, and third year of school. The four programs used were the initial teaching alphabet (i.t.a.), Words in Color (WIC), Phonetic Keys, and teacher-designed analytic programs. At the end of the first year there appeared to be a rather clear advantage in favor of i.t.a., a trend which continued to the end of the second year but not the third. Third-year results indicated some definite advantages of WIC for boys. There appeared to be definite disadvantages for boys who participated in the Phonetic Keys program. For the girls, none of the four programs was markedly superior. In a replication and extension study done at the first-year level in 1968-69, Lippincott Basic Reading and Sullivan Programmed method groups were added, and Phonetic Keys was no longer included. The replication found that i.t.a. and Lippincott ranked highest, WIC ranked second, while the remaining methods tended to rank low. A questionnaire of student attitudes found that the children responded with positive feelings about reading, school, and their competency 72 percent of the time. Other questionnaire findings and tables reporting test results are included. (Author/DH)

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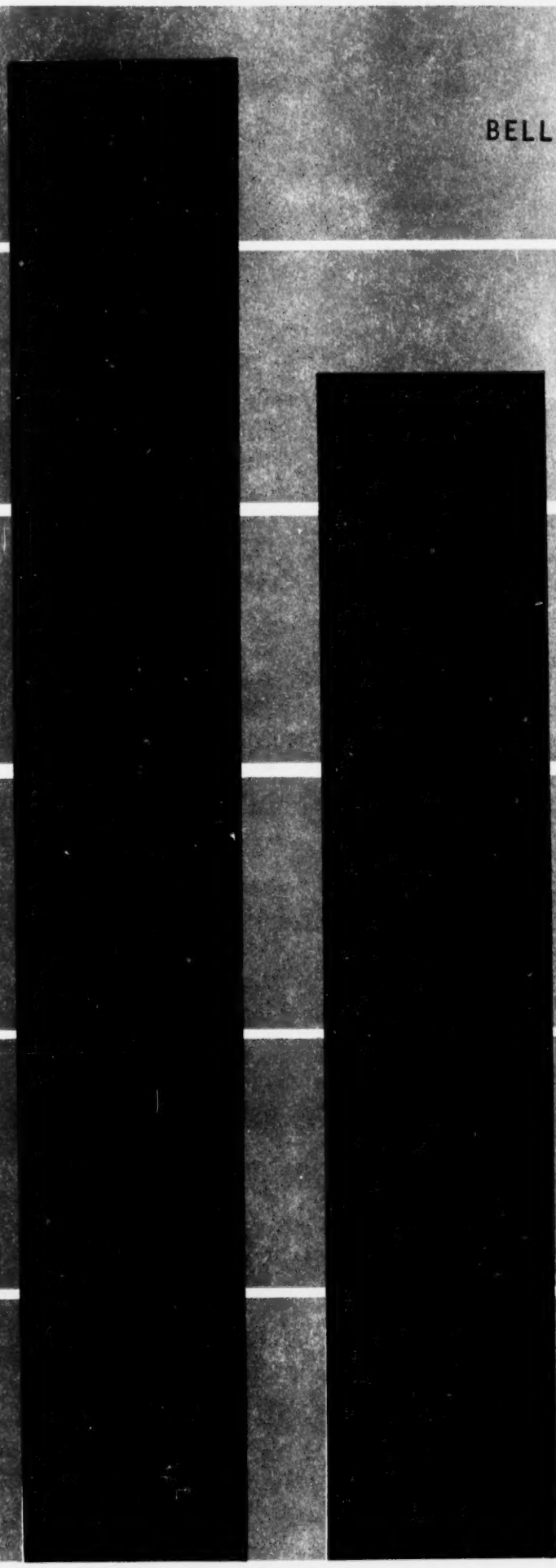
Research Brief



BELLEVUE READING STUDY
FINAL REPORT

by

DEPARTMENT OF RESEARCH

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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BELLEVUE PUBLIC SCHOOLS
Bellevue, Washington

BELLEVUE READING STUDY
FINAL REPORT

Department of Research and Development

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BELLEVUE PUBLIC SCHOOLS
Bellevue, Washington

BELLEVUE READING STUDY - FINAL REPORT
January 1970

The Bellevue Reading Study was initiated in the Spring of 1965 by the Bellevue Public Schools. The objective of the study was to evaluate four methodological approaches to the teaching of reading in the elementary grades. The four methods to be evaluated were Words in Color, i/t/a, Phonetic Keys, and teacher designed analytic approaches.

There were four major aspects to the study as originally planned:

1. Comparison of achievement among the four programs in various academic areas for children who have been in one of the programs for one, two or three complete years (pure groups).

2. Comparison of the progress of children within each program from year to year.

3. Comparison at the end of the third year of achievement of children who entered one of the programs between 12/1/65 and 3/1/67 (mixed group) with achievement of children who were in that program for three complete years (pure groups).

4. Investigation of the progress of children who have moved from one experimental program to another.

The June 1968 progress report from the Research and Development Office presents an analysis of the results in regard to "1" above, comparison between method groups of children who had been in one of the programs for one, two or three complete years. On the basis of the analysis of differences between "pure" groups, certain tentative conclusions were drawn:

1. At the end of the first year there appeared to be a rather clear advantage in favor of i/t/a. This continued to be the trend at the end of the second year. This trend did not appear to continue through the third year, however.

2. In terms of end of third year results, WIC appeared to offer some definite advantages to boys as a group.

3. There appeared to be definite disadvantages for boys who participated in the Phonetic Keys program.

4. Although there were differences in achievement among the four programs for girls, none of these were statistically significant. Therefore, it was concluded that for girls none of the four programs was markedly superior.

Comparison of the progress within each program from year to year (2 above) has been analyzed and reported in Mrs. Maxine Van Nostrand's master's thesis of June 1969.[1] These results will be summarized here.

Also, Mrs. Van Nostrand, Coordinator of Reading, with the cooperation of the District's reading teachers, has made a case history study of the progress of 35 children who have moved from one in-district program to another (comparison number 4 above). These results will also be summarized in this report.

Achievement results for pupils who moved into a program after its inception as compared with the achievement of the original "pure" groups will be presented (comparison number 3).

The achievement on the Stanford Achievement Tests of the original pure groups in February of their fourth year has been examined to check on the lasting effects of the differences among the four reading programs. These results will be presented in this report.

Finally, replication of the study was conducted in May of 1969 at the first year level. These results will also be reported here.

COMPARISON OF THE PROGRESS FROM YEAR TO YEAR WITHIN EACH PROGRAM

The end of first year to end of third year progress within method graphs (Appendix A) showed the following trends:

1. In word reading for both boys and girls, i/t/a and WIC show slower progress in the second year than in the third year. The second year is a year of transition from i/t/a alphabet to traditional alphabet in i/t/a. A possible explanation for the difference in WIC is not readily available. Analytic and Phonetic Keys show even progress.

2. Spelling progress during the second year tended to be comparatively rapid for WIC boys and girls when compared with WIC third year gains. The tendency to emphasize work on variant spellings of vowel and consonant sounds during the second year in WIC may partially account for this. During this transitional second year, i/t/a showed slower progress and Analytic and Phonetic Keys showed even progress.

3. Also in word study skills and paragraph meaning, i/t/a has a second year slow down, but WIC, Analytic and Phonetic Keys, show more even progress. These trends are indicated for both boys and girls.

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[1] Van Nostrand, Maxine, A Comparison of Our Different Beginning Reading Programs in First Grades, Second Grades, and Third Grade in the Bellevue School District. Unpublished M.Ed. thesis, Seattle University, September 1968.

CASE HISTORY STUDIES OF THE PROGRESS OF CHILDREN WHO MOVED FROM ONE EXPERIMENTAL PROGRAM TO ANOTHER

Mrs. Van Nostrand and the elementary reading teachers identified thirty-five children who moved from one within-district school to another within-district school. In all but two instances these were moved from one method to a different method. A case study form is to be found in Appendix B together with a tabulation of these students' responses. A case history was recorded by the elementary reading teacher at the school to which the pupil transferred. Mrs. Van Nostrand analyzed these results and stated in her report as follows:

"In summary, one can generally say that all children made good progress. The lower scores[1] tended to fall in the group moving in and out of i/t/a. This, one can assume, was due to the complete change of symbols used. The survey showed that the favorite school subject was mathematics with reading second." The subjects marked least favorite by the most pupils were English and math.[2] Social studies and spelling were marked least favorite by almost as many of these children.

"One interesting fact that was brought out in the survey showed that children could usually figure out the words themselves in the reading books and that most felt they did not need more help from their teacher. It was rather interesting that most children enjoyed the ungraded schools better than schools having self-contained classrooms. Generally in the parent conferences the parents thought the Bellevue reading program was fine and felt that very little time was needed for their children to adjust to the new reading program."

MIXED AND PURE GROUP COMPARISON

The Stanford Achievement Test[3] results for "mixed" and "pure" group third grade students in the Spring of 1968 were compared by method and by subtest using student's t test. Mean non-verbal raw acores on the Lorge Thorndike Intelligence test[4] given in April of their third year (1968) had first been compared using student's t test. There were no significant differences between mixed and pure group means in ability as measured by this test (.05 level of confidence).

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[1] Fourth year Stanford Achievement Test Word Reading Grade Equivalent scores. February, 1969 Administration, Intermediate I Battery, Form X, Harcourt, Brace and World, Inc., 1964 edition.

[2] A large proportion of children liked math best, whereas a large proportion liked it least. Attitudes toward math were strong - negative or positive.

[3] Stanford Achievement Test, Intermediate I Battery, Form W, Harcourt, Brace and World, Inc., 1964 edition.

[4] Lorge Thorndike Intelligence Tests, Multi-level, A-H, Form I, Houghton Mifflin Company, 1964 edition.

The "mixed" sample was composed of a random selection of children who entered one of the programs between 12/1/65 and 3/1/67 [1], who were present for the May 1968 SAT and April 1968 Lorge Thorndike test administrations. The end of year achievement test results are presented in detail in Table I. Abbreviations for subtests are to be interpreted as follows: WM - Word Meaning; PM - Paragraph Meaning; SP - Spelling; WS - Word Study Skills; Ar. Conc. - Arithmetic Concepts.

As can be seen by Table I, differences between adjusted means were not great and none of the t values were significant. However, inspection of the direction of mean differences does show a possible tendency for the means of the pure groups in all methods for most reading related subtests to be higher.

END OF FOURTH YEAR RESULTS

Stanford Achievement subtest scores were compared between methods for the original pure group students on the basis of the results of Uniform Testing Program February 1968 testing. Table II presents the results for boys and Table III presents the results for girls. The non-verbal raw score on the Lorge Thorndike Intelligence Test was used to adjust means, using the analysis of covariance statistical technique and student's t test. None of the differences were significant. However, both WIC and Analytic tended to be superior to i/t/a for boys and WIC tended to be superior to Analytic for boys, as indicated by the direction of the small differences between adjusted mean scores. The trend showing some WIC advantage for boys at the end of the third year appears to be continued; however, with no statistical significance. The reduction of the N may be partially responsible for the lack of significance.[2] None of the differences on Table III (girls) are significant. However, there also appears to be a slight trend favoring WIC to Analytic for girls. Differences between i/t/a and the other two methods are inconsistent in the direction of the difference.

REPLICATION - END OF FIRST YEAR - MAY 1969

Replication of the 1966 comparison was done in May of 1969. Replication was done for the following reasons:

1. In order to determine if the significant differences between pure group mean achievement test scores which occurred at the end of the first year will be observed (a) with a new group of pupils; and (b) with some changes in teaching staff.

---

[1] December of first grade to March of second grade. Beyond March of the second the reading instruction programs were not considered to be systematically different.

[2] A different form of the Intermediate level SAT was used in fourth grade (Form W, third grade - Form X, fourth grade) so direct comparison of mean differences cannot be made.

TABLE I

AN ANALYSIS OF THE MEAN DIFFERENCE BETWEEN MIXED AND 'PURE' GROUPS OF THIRD YEAR PUPILS INVOLVED IN FOUR METHODS OF TEACHING READING IN THE BELLEVUE PUBLIC SCHOOLS

Method	Sub Test	Mixed Group N	Mixed Group Mean	Pure Group N	Pure Group Mean	Mean Diff.	t
i/t/a	WM	22	20.2	22	21.1	.9	.397
	PM	22	32.1	22	30.7	1.4	.463
	Sp	22	23.4	21	25.1	1.7	.554
	WS	22	39.1	21	43.6	4.5	1.329
	Ar Con.	22	14.7	22	15.2	.5	.258
WIC	WM	45	18.4	47	19.6	1.2	.780
	PM	45	27.6	47	29.8	2.2	.884
	Sp	47	23.1	48	23.6	.5	.216
	WS	47	35.3	48	36.2	.9	.329
	Ar Con.	47	14.5	47	14.3	.2	.119
PK	WM	23	15.7	61	17.9	2.2	1.234
	PM	22	26.8	61	27.8	1.0	.389
	Sp	22	20.8	60	21.7	1.3	.558
	WS	22	37.7	60	36.9	.8	.292
	Ar Con.	23	12.7	60	11.7	1.0	.769
Analytic	WM	33	16.6	61	19.0	2.4	1.405
	PM	32	26.7	61	29.3	2.6	1.056
	WS	35	36.1	62	38.6	2.5	.941
	Sp	35	21.3	61	24.7	3.4	1.406
	Ar Con.	33	13.4	61	13.5	.1	.106

A t value of 1.64 is necessary to reach the .05 level of confidence with infinite degrees of freedom, thus none of these t values is significant.

TABLE II

ADJUSTED MEAN CRITERION SCORES, AND DIFFERENCES AMONG MEANS, OF VARIOUS TREATMENT GROUPS - BOYS FEBRUARY 1969 - FOURTH YEAR

Methods		N	Adjusted Mean Scores	Differences Between Means: W.I.C.	Differences Between Means: Analytic
	WM	13	21.1	-4.1	-1.4
	PM	13	32.1	-5.6	-1.8
i/t/a	SP	13	26.1	-5.6	- .6
	WS	13	43.1	-4.7	- .1
	Ar Con.	13	18.2	-2.8	+ .5
	WM	20	25.2		+2.7
	PM	20	37.7		+3.8
W.I.C.	SP	20	31.7		+5.0
	WS	20	47.8		+4.6
	Ar Con.	20	21.0		+3.3
	WM	27	22.5		
	PM	27	33.9		
Analytic	SP	27	26.7		
	WS	27	43.2		
	Ar Con.	27	17.7		

Positive signs denote differences favoring method to left.
Negative signs denote differences favoring method to right.

TABLE III

ADJUSTED MEAN CRITERION SCORES, AND DIFFERENCES AMONG MEANS, OF VARIOUS TREATMENT GROUPS - GIRLS FEBRUARY 1969 - FOURTH YEAR

Methods		N	Adjusted Mean Scores	Differences Between Means: W.I.C.	Analytic
i/t/a	WM	16	24.5	+ 1.2	+ 2.1
	PM	16	34.6	- 1.9	- .5
	SP	16	30.8	- 3.2	- 1.6
	WS	16	47.5	+ .4	+ 2.4
	Ar Con.	16	16.9	- 1.3	+ 1.7
W.I.C.	WM	17	23.3		+ .9
	PM	17	36.5		+ 1.4
	SP	17	34.0		+ 1.6
	WS	17	47.1		+ 2.0
	Ar Con.	17	18.2		+ 3.0
Analytic	WM	25	22.4		
	PM	25	35.1		
	SP	23	32.4		
	WS	23	45.1		
	Ar Con.	24	15.2		

Positive signs denote differences favoring method to left.
Negative signs denote differences favoring method to right.

2. In order to determine whether advantages for i/t/a will be seen if the achievement of these pupils is measured at the end of the first year on a test which utilizes the traditional alphabet. On the original study, i/t/a taught children only were tested at the end of the first year using a special form of the Stanford Achievement Test which utilized the i/t/a alphabet.

3. A check on the possible operation of the "Hawthorne" effect. WIC and i/t/a will have been in use in the district for several years and any initial "new" method enthusiasm may have subsided to some extent. Also, there was apparently considerable awareness on the part of teachers of being involved in an important comparative study; this awareness may have affected the results although there's no particular reason to believe it would have affected one method more than another. Replication with little discussion or fanfare would perhaps reduce the influence of "being studied" on the results.

Phonetic Keys has since been dropped from the Bellevue program, so it was not included in the replication. However, two additional methods were added to the study: the Lippincott [1] program and Sullivan's Programmed Reading combined with planned reinforcement schedules.[2] Also, measurement was extended to include feedback from both teachers and students by means of questionnaires. These questionnaires are included in Appendix C. Table IV shows the number of first grade pupils involved by method, by school and by sex.

The groups included all children in the Lippincott, Sullivan and i/t/a programs as each of these methods was limited to one school. The intention was to secure approximately 62 boys and 62 girls from WIC and Analytic schools. The number to be selected from any one school was determined on the basis of that school's first grade enrollment relative to the size of the first grade enrollment of the other schools using that method. Thus those schools with a larger first grade enrollment had a proportionately larger representation in the sample. The students to be a part of the sample were selected at random from lists of those who had had the Metropolitan Readiness Test in October. A table of random numbers was used in making the selection. The number who were still enrolled and who took the SAT in May are shown by subgroup in Table IV.

---

[1] Lippincott's Basic Reading, J. B. Lippincott Company, Philadelphia, 1963-1969.

[2] Buchanan, Cynthia Dee, and Sullivan Associates, Programmed Reading, McGraw Hill Book Company, San Francisco, 1964. Miss Diane Renne, doctoral candidate in Education at the University of Washington worked out the reinforcement aspect of the program and facilitated its application to the Sullivan materials in the two first year classrooms.

Limitations

Generalization from the results should be made with caution because of the following circumstances:

1. Words in Color was used in multi-graded schools only, whereas the other four methods were used in essentially single graded schools.

2. Lippincott, i/t/a and Sullivan were each used in one building only, with small numbers of teachers. Although all teachers were experienced, the teacher variable could by no means be considered to be controlled.

3. Sullivan was in the first year of implementation and Lippincott in the second year with the possibility of new program difficulties and/or enthusiasms operating.

4. End of first year results are of interest but not conclusive; this was why the original study was continued four years. This would appear to be particularly true of i/t/a. Neither the TO or alpha test results are conclusive with i/t/a taught pupils. The TO test puts them at a decided disadvantage as they have not yet been helped to make the transition to traditional orthography. On the other hand, the i/t/a alpha test results can hardly be considered predictive of what these pupils will be able to do with traditional orthography.

Stanford Achievement Test Comparisons

Traditional alphabet Stanford Achievement tests[1] were administered by the classroom teachers to all pupils in the week of April 28 to May 2, 1969. The i/t/a form of the SAT[2] was administered to the i/t/a instructed pupils after the TO test had been given. Initial differences in readiness were statistically adjusted on the basis of October Metropolitan Readiness Test total raw scores using the analysis of covariance statistical technique. Schaffe's t test was used to determine the significance of differences between adjusted means. Table V presents adjusted mean scores for girls for the various methods and the direction of the difference between means together with the level of significance of the difference. Table VI presents similar data for boys.

Student's t test was used to compare methods in the original study. Although Schaffe's t test is very similar, somewhat larger differences are required to reach "significance". Schaffe's test is somewhat more strict; it is a more recently developed technique which is somewhat more defensible whan a number of mean comparisons are being made.

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[1] Stanford Achievement Test, Primary I Battery, Form W, Harcourt, Brace and World, Inc., 1964 edition.

[2] stanford achievment test, Primary I Battery, Form W, i/t/a edition, Harcourt, Brace and World, Inc., 1965 edition.

Abbreviations for subtest titles are to be interpreted as follows: WR - Word Reading, PM - Paragraph Meaning, Vo - Vocabulary, SP - Spelling, WS - Word Study Skills, and Ar - Arithmetic.

In 1966, when i/t/a alpha, WIC, Analytic and Phonetic Keys were compared for first year girls, i/t/a alpha was superior to the other three methods in all areas and significantly so in word reading, paragraph meaning, spelling and word study skills, but not in vocabulary or arithmetic. In 1968, i/t/a alpha is again significantly superior on the same subtests to all other methods including i/t/a TO. In addition it was significantly superior in arithmetic to Analytical, Words in Color, and Sullivan (Table V).

The method showing the next highest mean achievement level was Lippincott. Lippincott mean subtest scores were higher in all instances except i/t/a TO arithmetic than those of children in all other groups (excepting i/t/a alpha). However, only one of these differences with WIC was significant (Word Study Skills). In four out of six subtests there were significant differences with Analytic and Sullivan; in two of six subtests, Lippincott means were significantly higher than i/t/a TO. WIC means tended to be higher than Analytic but not significantly so. In 1966, WIC was significantly superior to Analytic in spelling. Other differences were inconsistent in direction. The WIC and i/t/a TO comparisons showed three differences favoring WIC and three differences favoring i/t/a TO. Only one of these was significant - that favoring WIC in arithmetic.

It should be kept in mind that for the most part i/t/a pupils had not as yet had instruction in the transition from the i/t/a alphabet to the traditional alphabet. This usually occurs during the early part of the second year of instruction. These results probably do have some implications in regard to children who move out of the program prior to the transitional instruction.

Sullivan and Analytic did not show significant differences with each other. For girls the SAT results give the following rough rank order:

i/t/a alpha
Lippincott
WIC
i/t/a TO
Sullivan-Analytic

The rough rank order in 1966 was:

i/t/a alpha
WIC
Analytic
Phonetic Keys

The 1966 and 1969 Achievement Test results for girls were quite consistent.

TABLE IV

DISTRIBUTION OF PUPILS BY SCHOOL
AND SEX FOR THE FIVE METHODS

		Male	Female
Words in Color			
	Ashwood	12	14
	Sunset	22	13
	Surrey Downs	8	17
	Lake Heights	20	15
	Total	62	59
Analytical			
	Clyde Hill	20	15
	Eastgate	24	19
	Ivanhoe	18	22
	Total	62	56
Lippincott			
	Hillaire	62	38
Sullivan			
	Medina	30	31
i/t/a			
	Stevenson	51	58

TABLE V

BELLEVUE READING STUDY - REPLICATION
ADJUSTED MEAN CRITERION SCORES, AND DIFFERENCE BETWEEN
ADJUSTED MEANS FOR VARIOUS TREATMENT GROUPS
GIRLS - SPRING 1969

Methods		Adjust. Mean Scores	W.I.C.	Sull.	Lipp.	i/t/a TO	i/t/a Alpha
	WR	21.14	-1.04	1.34	-5.73*	- .94	- 8.28**
	PM	18.79	-1.28	2.63	-6.02	-1.83	- 8.95**
Analytic	Vo	24.28	-1.83	-2.90	-4.80*	-1.29	- 3.46
	Sp	9.87	-1.38	.08	-4.38**	2.22	- 5.30**
	WS	39.99	- .70	- .12	-8.06**	- .25	- 7.96**
	Ar	39.58	- .40	3.64	-3.51	-4.70	- 8.13**
	WR	22.18		2.38	-4.69	.10	- 7.24**
	PM	20.07		3.91	-4.74	- .55	- 7.67**
W.I.C.	Vo	26.11		-1.07	-2.97	.54	- 1.63
	Sp	11.25		1.46	-3.00	3.60**	- 3.92**
	WS	39.29		- .82	-8.76**	- .95	- 8.66**
	Ar	39.98		4.04	-3.11	-4.30	- 1.73**
	WR	19.80			-7.07*	-2.28	- 9.62**
	PM	16.16			-8.65*	-4.46	-11.58**
Sullivan	Vo	27.18			-1.90	1.61	- .56
	Sp	9.79			-4.46*	2.14	- 5.38**
	WS	40.11			-7.94*	- .13	- 7.84**
	Ar	35.94			-7.15	-8.34*	-11.77**
	WR	26.87				4.79	- 7.34**
	PM	24.81				4.19	- 7.12*
Lippincott	Vo	29.08				3.51	- 2.17
	Sp	14.25				6.69**	- 7.52**
	WS	48.05				7.81**	- 7.71**
	Ar	43.09				-1.19	- 3.43
	WR	22.08					- 7.34**
	PM	20.62					- 7.12*
i/t/a TO	Vo	25.57					- 2.17
	Sp	7.65					- 7.52**
	WS	40.24					- 7.71**
	Ar	44.28					- 3.43
	WR	29.42					
	PM	27.74					
i/t/a Alpha	Vo	27.74					
	Sp	15.17					
	WS	47.95					
	Ar	47.71					

** Significant at 1 percent level of confidence
* Significant at 5 percent level of confidence
Positive signs denote differences favoring method to left.
Negative signs denote differences favoring method to right.

TABLE VI

BELLEVUE READING STUDY - REPLICATION
ADJUSTED MEAN CRITERION SCORES, AND DIFFERENCE BETWEEN
ADJUSTED MEANS FOR VARIOUS TREATMENT GROUPS
BOYS - SPRING 1969

Methods		Adjust. Mean Scores	W.I.C.	Sull.	Lipp.	i/t/a TO	i/t/a ALPHA
	WR	18.31	-1.40	1.40	-3.87	1.56	- 9.79**
	PM	15.66	1.98	4.80	-4.07	2.95	- 5.70
Analytic	Vo	25.75	.83	-1.36	-2.42	-1.48	- 2.48
	Sp	7.18	-1.54	.25	-4.08**	1.57	- 7.71**
	WS	37.75	2.94	.26	-4.56	- .13	- 8.51**
	Ar	39.59	.30	.39	-2.92	-2.79	- 6.96
	WR	19.71		2.80	-2.47	2.96	- 8.39**
	PM	13.68		2.82	-6.05*	.97	- 7.68*
W.I.C.	Vo	24.92		-2.19	-3.25	-2.31	- 3.31
	Sp	8.72		1.79	-2.54	3.11*	- 6.17**
	WS	34.81		-2.68	-7.50**	-3.07	-11.45**
	Ar	39.29		- .69	-3.22	-3.09	-7.26
	WR	16.91			-5.27	.16	-11.19**
	PM	10.86			-8.87*	-1.85	-10.50*
Sullivan	Vo	27.11			-1.06	- .12	- 1.12
	Sp	6.93			-4.33*	1.32	-7.96**
	WS	37.49			-4.82	- .39	- 8.77*
	Ar	39.98			-2.53	-2.40	- 6.57
	WR	22.18				5.43	- 5.92
	PM	19.73				7.02	- 1.63
Lippincott	Vo	28.17				.94	- .06
	Sp	11.26				5.65**	- 3.63*
	WS	42.31				4.43	- 3.95
	Ar	42.51				.13	- 4.04
	WR	16.75					-11.35**
	PM	12.71					- 8.65*
i/t/a TO	Vo	27.23					- 1.00
	Sp	5.61					- 9.28**
	WS	37.88					- 8.38**
	Ar	42.38					- 4.17
	WR	28.10					
	PM	21.36					
i/t/a	Vo	28.23					
ALPHA	Sp	14.89					
	WS	46.26					
	Ar	46.55					

** Significant at 1 percent level of confidence
* Significant at 5 percent level of confidence
Positive signs denote differences favoring method to left.
Negative signs denote differences favoring method to right.

In 1966, when i/t/a alpha, WIC, Analytic and Phonetic Key; were compared for boys, i/t/a alpha means were higher than means of all other methods in most achievement areas. The only exception was arithmetic in relation to WIC. Alpha means for i/t/a were significantly higher than all other means in word reading, paragraph meaning, spelling and word study skills.

In 1969, i/t/a alpha means were higher than all other means for all other methods. These differences were significant in the areas of word reading, paragraph meaning, spelling and word study skills for the i/t/a alpha comparisons with WIC, Sullivan and i/t/a TO. They were significant in word reading, spelling, and WS skills with Analytic, but not for paragraph meaning. In spelling only, was i/t/a alpha significantly superior to Lippincott.

In 1966, all WIC means were higher than Analytic means but none of these differences were statistically significant. In 1969, the differences for boys between WIC and Analytic were not consistent in direction. None of these differences in 1968 were significant.

Lippincott means were higher on all subtests than i/t/a TO, WIC, Analytic, or Sullivan; significantly so in spelling only - with Analytic and i/t/a TO, and in spelling and paragraph meaning with Sullivan, and in WS skills and paragraph meaning with WIC.

The differences between Analytic, WIC, i/t/a TO and Sullivan were not consistent in direction and only one was significant; that favoring WIC over i/t/a TO in spelling.

The rough ranking in 1966 was:

i/t/a alpha
WIC-Analytic
Phonetic Keys

The rough ranking in 1969 was:

i/t/a alpha
Lippincott
WIC/Analytic/Sullivan/ i/t/a TO

The 1969 results were for the most part consistent with the 1966 results.

Pupil Attitude Questionnaire Comparisons

Pupil Attitude Questionnaires were administered by the classroom teachers to all classes involved in the study in May of 1969. The questionnaire, which is shown in Appendix C, was made up of 11

questions answerable by yes or no. Yes responses were indicative of positive feelings and attitudes in nine questions. Questions numbered 7 and 9 were stated in the reverse. The responses were tallied as "positive" or "negative" in regard to attitude. These 11 questions were classified in four categories: Interest in Reading, Interest in School, Feelings of Competency and Competency in School. Table VII shows the sums of positive and negative responses by method and by category.

From the data in Table VII, a ten cell (2 x 5) chi square analysis was done for each category and for the totals. Table VIII gives these chi square values. In two categories, Interest in Reading and Interest in School, and for the totals these x^2 values were significant at the .01 level of confidence. Thus, null hypotheses that there was no relationship between membership in a methods group and frequency of positive or negative answers in these two categories and for the total would have to be rejected.

Following determination of over-all significance of chi square values, method by method chi square comparisons were made. These chi square values, with signs added to denote method group favored, are shown in Table IX.

In respect to total responses on all questions, pupils responded with positive feelings about reading, school and their competency 72% of the time and negatively 28% of the time (Table VII).

In three of the areas, the large majority of the answers were positive. The Competency in School category consisted on one item, "Do you do well in school?", and ninety percent of first graders answered this affirmatively. It would seem that the ten percent who didn't would still be of marked concern. It would be interesting to know how this might compare with responses from second, third, and other older students as to thier feelings of adequacy in respect to school accomplishment.

The Interest in School category had three "tough" questions. For example, "Would you like to go to school part of the summer?" The relatively low (50%) positive percentage here seems to indicate that enthusiasm for school is somewhat tempered. (See Items 5, 6, and 7 - Appendix C, Page 26A.)

The method by method comparisons appear to show some trends.

1. Total scores showed Analytical and Lippincott both significantly higher than WIC and Sullivan but showed no other significant differences between the methods.

2. Sullivan tended to be low in interest in reading with no significant difference between other methods.

TABLE VII

PUPIL ATTITUDE TOWARD READING

Sum of positive and negative responses
by category and by method

May 1969

Category	Method										Combined Methods			
	i/t/a		Sullivan		Lipp.		W.I.C.		Analytic					
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Total	% Pos.
Interest in Reading (Items 1 through 4)	362	90	118	61	317	83	337	103	321	106	1455	443	1898	77
Interest in School (Items 5 through 7)	154	196	70	100	187	109	129	202	373	177	913	774	1687	54
Feelings of General Competency (Items 8 through 10)	269	73	148	23	230	68	273	58	267	56	1187	278	1465	81
Competency in School (Item 11)	104	10	52	5	88	11	98	13	100	8	442	47	489	90
Total	889	359	388	189	822	271	837	376	1061	347	3997	1542	5539	72

TABLE VIII

PUPIL ATTITUDE QUESTIONNAIRE
OVERALL CHI SQUARE ANALYSIS

Overall chi square analysis of total positive and negative responses for the five methods by questionnaire category.

Category	X^2 Value	df
Interest in reading	16.137**	4
Interest in school	104.058**	4
General competency	8.520	4
Competency in school	1.561	4
Total	25.70 **	4

** Significant at the .01 level of confidence
* Significant at the .05 level of confidence

TABLE IX

CHILDREN'S ATTITUDE QUESTIONNAIRE

CHI SQUARE STATISTICAL COMPARISON OF POSITIVE-NEGATIVE RESPONSES IN THE FOUR CATEGORIES OF THE CHILDREN'S ATTITUDE QUESTIONNAIRE

Methods		Total Pos.	Total Neg.	Total % Post.	Sullivan	Lippincott	W.I.C.	Analytic	df
i/t/a	Interest in reading	362	90	80	+ 14.14**	+ .09	+ 1.61	+ 3.06	1
	Interest in school	154	186	45	+ .78	- 20.34**	+ 2.75	- 44.14**	1
	General competency	269	73	79	- 4.67*	+ .20	- 1.56	- 1.70	1
	Competency in school	104	10	91	.00	+ .32	+ .53	- .08	1
	Total	889	359	71	+ 2.98	- 4.67	+ 1.47	- 5.76	4
Sullivan	Interest in reading	118	61	66		- 6.60*	- 7.43**	- 6.27*	1
	Interest in school	70	100	41		- 21.13**	+ .23	- 38.94**	1
	General competency	148	23	87		+ 6.42*	+ 1.38	+ 1.26	1
	Competency in school	52	5	91		+ .21	+ .34	- .10	1
	Total	388	189	67		- 11.99*	- .55	- 13.66**	4
Lippincott	Interest in reading	317	83	79			+ .86	+ 1.94	1
	Interest in school	187	109	63			+ 36.61**	- 1.85	1
	General competency	230	68	77			- 2.74	- 2.91	1
	Competency in school	88	11	89			+ .02	- .85	1
	Total	822	271	75			+ 10.97*	- .01	4
W.I.C.	Interest in reading	337	103	77				+ .24	1
	Interest in school	129	202	39				- 70.14**	1
	General competency	273	58	82				- .00	1
	Competency in school	98	13	88				- 1.17	1
	Total	837	376	69				- 12.13*	4
Analytic	Interest in reading	321	106	75					
	Interest in school	373	177	68					
	General competency	267	56	83					
	Competency in school	100	8	93					
	Total	1061	347	75					
	Grand Total	3997	1542	72					

** Significant at the .01 level of confidence; with 1 degree of freedom 6.635 or greater; with 4 degrees of freedom 13.277 or greater

* Significant at the .05 level of confidence; with 1 degree of freedom 3.841 or greater; with 4 degrees of freedom 9.488 or greater

Positive signs denote proportions favoring method to the left

Negative signs denote proportions favoring method at the top

3. There appeared to be some relationship between mean achievement level and degree of positiveness (see total percentage positive in Table IX). However, this relationship was not entirely consistent.

4. In interest in school, Analytic and Lippincott tended to be high with no significant differences between the other methods.

5. Sullivan children showed some tendency to be high in feelings of general competency in relation to i/t/a and Lippincott, with little difference shown between the other methods.

6. In the one item category, competency in school, there were no significant differences between method groups.

Teacher Attitude Questionnaire Results

Teachers in all classrooms using these five approaches were asked to fill out questionnaires in May of 1969. This form is shown in Appendix C. The responses were tabulated and are given in Table X.

The answers to Question 1, relating to the method being used currently, show experimental contamination in at least five of the thirty-six classrooms in that Sullivan was used to some degree in one WIC classroom and Lippincott was used to some degree in one i/t/a, one WIC, and two Analytic classrooms. The proper description of the Sullivan and Lippincott rooms then would appear to be "pure" Sullivan and "pure" Lippincott.

No statistical comparisons were made but certain tendencies appear to be present in the data. The teachers were asked to name a previous method used and to make certain comparisons with this former method. The large majority of the teachers named a basal reading method as the previous method. The comparative responses of those four WIC teachers who made comparisons with methods other than basal are coded in Table X and are not considered in the generalizations that follow. In comparing their present method with the basal approaches these tendencies appeared:

1. Teachers of all methods other than analytic tended to see the present method as having fewer teacher directed lessons than a basal reader approach. One WIC teacher commented that this was because of "more groups".

2. Teachers of Sullivan, WIC, and Lippincott tended to report giving more individual attention and support than with their former basal reader approach.

3. Responses indicated a tendency for Lippincott to have more class demonstrations than basal and Sullivan and i/t/a to have fewer.

TABLE X

TEACHER QUESTIONNAIRE RESPONSES

Question	1968-69 Method Group									
	i/t/a		Sull.		W.I.C.		Analy.		Lipp.	
1. What method are you presently using for teaching reading? Tie as closely as possible to a single identifiable method (e.g. Basal Reader, I.T.A, Words in Color, Lippincott or Sullivan).	i/t/a	3	Sull.	2	WIC	18	Basal readers	6	Lipp.	4
	Lipp. & i/t/a	1			WIC plus Sull. & SRA	1	Basal plus SRA	2		
					WIC plus SRA & Lipp.	1	Basal plus Lippincott	2		
					WIC plus SRA	1				
2. In questions 3 and 4 you will be asked to compare the method of teaching reading you are currently using with another method which you have used in the past. The other method you are using for comparison is:	Basal	3	Basal	1	Basal	13	None	9	Basal	4
	None	1	Basal plus Ph. Keys and Gill.	1	Lipp.	1	Basal Reader only	1		
					Ph.Keys	2				
					Sull.	1				
					None	4				
3. If you have used another method, please indicate, in contrast to the method previously used, how much your current method utilizes the following:										
a. Teacher directed lessons.										
More					3 (2) *		1		2	
The same					1		1		1	
Fewer	2		2		8 (2) *				2 **	
No check	2				5		8			

* Comparison made with other than a basal reader approach.

** Teacher checked more than one category.

TABLE X (CONTINUED)

Question		1968-69 Method Group i/t/a	Sull.	W.I.C.	Analy.	Lipp.
b. Individual attention and support by teacher to pupil.						
	More	1	2	6 (2) *	2	2
	The same			3 (2) *		2
	Less	1		4		
	No check	2		4	8	
c. Class demonstrations.						
	More			5 (1) *	1	4
	The same			1 (3) *	1	
	Fewer	1	2	4		
	No check	3		7	8	
d. Teacher planning and preparation.						
	More			6 (2) *	1	1
	The same	1	2	4 (2) *	1	2
	Less	1		3		1
	No check	2		4	8	
e. Pupil directed activities.						
	More	2	2	13 (3) *	2	2
	The same			(1) *		2
	Fewer					
	No check	2		4	8	
4. In relation to the reading method previously used, do you find a higher or lower degree of student involvement with your present method?						
	Higher	2	2	13 (3) *	1	4
	Same			(1) *	1	
	Lower					
	No check	2		4	8	

* Comparison made with other than a basal reader approach.

TABLE X (CONTINUED)

Question	1968-69 Method Group				
	i/t/a	Sull.	W.I.C.	Analy.	Lipp.
5. Using your current method, how successful do you feel in the area of teaching reading?					
Very successful	2	1	12	4	4
Moderately successful	2	2 **	9	5	
Not successful					
No check				1	
6. Do you feel that you receive adequate orientation and support in respect to your reading program?					
Very adequate	2		14	5	3
Moderately adequate	1	2	3	3	1
Inadequate	1		4	1	
No check				1	
7. Do you have adequate instructional facilities for carrying out your reading program?					
Very adequate			10	4	3
Moderately adequate	4		10	4	1
Inadequate		2	1	1	
No check				1	
8. Are the necessary instructional materials readily available?					
Usually	3		17	9	3
Sometimes	1	1	4		1
Rarely		1		1	
9. Are the materials as usable as represented by the publisher?					
Most are	4		9	4	4
Some are		2	12	4	
Few are				1	
No check				1	

** Teacher checked more than one category.

TABLE X (CONTINUED)

Question	1968-69 Method Group				
	i/t/a	Sull.	W.I.C.	Analy.	Lipp.
10. Is reading interesting for you to teach?					
Very interesting	4	2	20	9	4
Moderately interesting			1	1	
Not interesting					
11. How many first grade pupils are in your room?					
	34 (1)	36-32 (1)	20 (1)	35 (1)	27 (2)
	33 (1)	37-32 (1)	19 (1)	34 (2)	26 (1)
	32 (1)		18 (1)	30 (1)	25 (1)
	31 (1)		17 (1)	28 (1)	
			16 (2)	27 (1)	
			15 (4)	25 (3)	
			14 (1)	15 (1)	
			13 (2)		
			12 (3)		
			10 (1)		
			9 (1)		
			8 (1)		
			7 (1)		
No check			1		
12. Estimate the percentage of your pupils who are very interested in reading?					
91% to 100%	2	2	9	6	2
71% to 90%	1		10		1
51% to 70%	1		2	2	1
21% to 50%					
0% to 20%					
No check				2	

TABLE X (CONTINUED)

Question	1968-69 Method Group				
	i/t/a	Sull.	W.I.C.	Analy.	Lipp.
13. How many of your pupils are apparently quite discouraged with their reading progress?					
None	1	2	7	7	1
1 - 3	1		12	2	3
4 - 6	2		2	1	
7 - 10					
More than 10					
14. In your estimation, how many of your pupils are not making satisfactory progress in reading?					
None		1	5		
1 - 3	3	1	11	4	3
4 - 6			4	4	1
7 - 10	1			1	
More than 10					
No check			1	1	

4. There appeared to be a tendency for WIC teachers to report the relative need for more teacher planning and preparation than teachers of the other methods.

5. Teachers of all methods other than analytic tended to report more pupil directed activities than with basal.

6. Teachers of all methods other than analytic tended to see a higher degree of student involvement than with the basal reader approach. Many WIC teachers made comments on this question stressing these views: WIC stimulates mental and physical activity. The chart and game activities, particularly the tapping out and writing of sentences, involve children creatively. i/t/a teachers commented on the early independence they feel i/t/a permits.

7. Lippincott and WIC teachers tended to report feeling most successful. Sullivan teachers tended to feel more successful with slower students than with better readers. Difficulty in getting materials in the Sullivan program was related by the teacher to only moderate feeling of success. Two WIC teachers felt WIC inappropriate to a few students, apparently the slower ones, and another felt she needed to use supplementary materials (Sullivan and SRA) in order for the slower students to meet with any success. Two WIC teachers also reported some feelings of insecurity and frustration with the method.

8. A large majority of WIC teachers reported very adequate orientation. The majority of Lippincott, i/t/a, and Analytic teachers also reported that they received very adequate orientation and support. Sullivan teachers reported only moderately adequate orientation and support. Comments from Sullivan teachers tended to stress that additional orientation, particularly as to pitfalls, would have been helpful.

9. Most teachers found instructional facilities moderately adequate or better; Sullivan teachers found these inadequate.[1]

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[1] This apparently was felt to be related to the large enrollments reported in Sullivan and/or the newness of the program. Teachers' comments indicated shortage of books, work books, plastic overlays and response booklets. They indicated the need for fewer students, more space for small group instruction, and more aides needed "to adequately carry out program to best advantage.

10. There were some problems reported in respect to the availability of instructional materials with Sullivan; not for the most part with the other methods.[1] Several WIC teachers mentioned the need for more supplementary reading materials, work books and work sheets. One i/t/a teacher reported a shortage of books.

11. i/t/a and Lippincott teachers found the materials usable as represented by the publisher. There appeared to be some problems with Sullivan, WIC and Analytic. A Sullivan teacher commented that some were not usable because of the size of the class and the other Sullivan teacher did not find the alphabet cards usable.

    WIC teachers for the most part found the charts of the greatest value, although one comment was that the charts needed more distinction between colors. Several teachers found the work sheets and WIC work books either dull, difficult, or otherwise not "child oriented". One WIC teacher stated that supplementation as with SRA was needed to give additional reading practice.

    The Analytic teachers generally did not comment on difficulties, except for the comment by one teacher that this teacher never saw the publishers, that "teachers are not included".

12. Unanimously the teachers of all methods reported finding reading at least "moderately interesting" to teach. The overwhelming majority in all methods found it "very interesting".

13. In regard to class sizes the WIC classrooms were multigraded and the questionnaire data did not indicate the entire class size, only the number of first year pupils. Of the other methods, Sullivan and i/t/a tended to have large sized classes (all above 31), Lippincott to have small classes (all below 28).

14. i/t/a and WIC teachers report having somewhat lower percentages of pupils very interested in reading and more pupils discouraged with reading progress. i/t/a teacher comments indicate, however, that most of these are transfer students. WIC teacher comments indicated they had a few children who were not ready for a formal reading program and that a pupil's attitude seemed to be related to that pupil's progress.

15. One Analytic and one i/t/a teacher reported that seven or more of her pupils did not appear to be making satisfactory

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[1] Ibid. One Lippincott teacher reported some difficulties getting materials during the first year of the program (1967-1968).

progress. The i/t/a teacher commented again that this group involves many transfer students. Half of the Analytic teachers and one-quarter of the WIC teachers indicated that they had four to six pupils not making satisfactory progress. About sixty-percent of all the teachers reported only one to three pupils not making satisfactory progress.

16. Responses to Question 15 soliciting descriptions of any weakness teachers saw with the current approach brought out the following kinds of comments: i/t/a teachers here too expressed concern regarding pupils transferring in or out. One teacher indicated that many problems develop from these children having been put in two types of materials but that during the 1968-69 year this was somewhat resolved by putting them all in her room and keeping them in TO. Insufficient i/t/a library books and other supplementary materials was mentioned by two of the teachers.

Sullivan teachers both mentioned not enough straight reading in hard-backed books provided for, that fluency was inhibited with too much filling in of blanks required. One teacher indicated that this method "absolutely requires more personnel present during reading time". The comment was also made that the method does not allow for enough practice in comprehension.

Many WIC teachers stressed the lack of provision by the publisher of sufficient multi-level activities and of interesting supplementary reading materials. Other problems mentioned included no readiness materials being provided; some unrealistic expectations for 6-7 year olds; very small print in books; need for supplementation where children are ready with additional reading skills such as periods, capitals, dictionary work including alphabetizing; a difficult approach for children who don't reason; too close similarity in some colors; and the need for pictures to stimulate interest. Several teachers indicated that the method is difficult to learn to teach. One teacher found slower children at times bogged down with long words and different vocabulary, and another teacher indicated that another pre-primer is needed for the slower children.

Analytic teachers mentioned the following problems: (1) need for more phonics and word attack skills, (2) subject matter often outdated, (3) introduction of sight words that are not commonly used, (4) that it takes a long time for children to become independent readers, (5) the introduction of sight words that are not commonly used and cannot be sounded out, and (6) the practice of linking a story with a child's environmental background which sometimes differs from that depicted in the book.

Lippincott teachers mentioned needing another book at the pre-primer level and that slower children are sometimes bogged down with the long words and difficult vocabulary.

17. Teachers commented at considerable length as to what they particularly liked about their current method. i/t/a teachers stressed the self assurance, interest, independence, and writing and spelling freedom of students. Also mentioned was the high interest level of the stories, that it provides to children a fundamental knowledge of language construction, its more advanced vocabulary, and that it is phonetic and a total program.

    WIC teachers liked the "word building approach", pupil emphasis and involvement, and the student responsibility for learning. They described the method as intellectually challenging, logically presented, interesting to teach, and a reasoning rather than memorizing approach. They reported that the WIC approach gives insight into language, permits a child to progress at his own rate, provides more opportunity to observe how pupils learn and has fewer near point visual tasks with use of the charts. They report that children continually push forward and boys particularly responded to the charts and games.

    Analytic teachers tended to mention the need for phonetic supplementation. They also mentioned the many easy stories which children tended to like; the "word kits"; and the workbooks, which one teacher felt provided coordinated, sequential materials for building comprehension skills.

    Sullivan teachers liked the introduction of spelling along with reading, no grouping thus no stigma attached to low readers, children work at their own speed, and children can write creative or dictated stories with ease and accuracy.

    Lippincott teachers commented that they thought the program does an excellent job in introducing phonics, that the stories are interesting, that the program gives confidence for writing at an earlier stage, that its a challenge even for the best students, that it provides a fundamental knowledge of language construction, that it leads to an ability to spell early, thus necessary skill for writing creative stories, and that the program emphasizes the fact that reading is the child's game and not the teachers'.

18. In Question 16, the teachers were asked to describe any weakness with the former method. Only the comment from those teachers who had formerly used a basal approach are reported here.

    i/t/a teachers found the basal reader approach dull for students, particularly boys, and for teachers. They indicated that pupils were slow to gain any independence in reading with this approach.

    Lippincott teachers described the basic approach as having too

many sight words, boring stories, stereotyped stories, not much phonics, a poor word attack skills program, and no sequential approach to words introduced. One teacher indicated that spelling and creative writing were difficult to introduce early.

Sullivan teachers mentioned the stigma of reading groups needed with a basal method, too many sight words introduced without enough background in phonics, boredom, lack of individualization and lack of early independent reading skills.

WIC teachers mentioned too much teacher direction with the former basal method; too little individualization; no chance for the child to be creative; too much parrotting of the "right" answer by children; no basis for attacking new words, lack of self motivation, physically inactive, little humor in content, not as much opportunity for pupils to proceed at their own speed, no alternative to grouping.

19. In the last question, the teachers were asked to comment on characteristics of the formerly taught method that they particularly liked. Here, again, only responses regarding basal reader approaches are included in this analysis.

The following attitudes were stressed: the large variety of instruction material available; that children did fairly well with it as far as it went; the ease developed in oral reading; the introduction of material to smaller groups; the practice with fluency and the emphasis on comprehension; the good pictures and the large print; that it made outside reading more readable than i/t/a; that interesting stories continued for several days and the interest level was higher than Lippincott at the pre-primer and primer level; the enrichment provided by the teachers manuals; beginning in a text, which boosted enthusiasm; more easily understood sentences than WIC; that the teacher could report to parents what page the child was working on; that the limited vocabulary was better in some ways than WIC for slow learners; children liked the stories and seatwork; that parents appeared to feel that they knew what was being done because "they had been through the same or a similar program"; and the many available reading books on the same level, particularly at the beginning level.

SUMMARY AND CONCLUSIONS

Achievement Comparisons, "Pure" Groups

The achievement of four groups of children as measured by the Stanford Achievement test was compared at the end of the first, second and third year of school. Children in each of the four groups had been in that particular program for all three elementary years. The children in the four groups were instructed in reading with the use of four different approaches: i/t/a, WIC, Phonetic Keys, and teacher designed Analytic. Children taught by the i/t/a approach were tested at the end of the first year only with a form of the Stanford which uses the initial teaching alphabet.

Conclusions were:

1. At the end of the first year there appeared to be a rather clear advantage in favor of i/t/a. This continued to be the trend at the end of the second year. This trend did not appear to continue through the third year, however.

2. Third year results indicated some definite advantages of WIC for boys.

3. There appeared to be definite disadvantages for boys who participated in the Phonetic Keys program.

4. Although there were differences in achievement among the four programs for girls, none of these differences was statistically significant. Therefore, it was concluded that for girls none of the four programs was markedly superior.

Trends in the pure group comparisons seen at the end of the third year tended to continue into February of the fourth year. However, by this time, with the number reduced as a result of population mobility, no inter-method differences were statistically significant. The superiority of i/t/a continued to abate with both WIC and Analytical boys tending to score higher than i/t/a boys. WIC tended to be superior to Analytic for girls with no consistent differences between i/t/a and WIC or i/t/a and Analytic. As Phonetic Keys had been dropped from the program, it did not figure in these comparisons.

Analysis of the progress from year to year within each program found i/t/a showing comparatively slow progress during the second transitional year in word reading, spelling, word study skills and paragraph meaning. WIC showed comparatively rapid growth in the second

year in spelling with a relative slow-down in progress in word reading in this second year. Analytic and Phonetic Keys showed rather even progress in all areas in the three years studied.

Case Studies of Transfer Students

Case studies of the progress of children who moved from one experimental program to another found children moving in and out of i/t/a tended to make relatively lower achievement test scores. This appeared to be due to the complete change in symbols.

In this total group of children, mathematics was reported to be the favorite school subject with reading second. English and math were reported to be least favorite by more pupils than were other subjects. These children generally felt they could figure out words themselves and felt they needed no additional help. These children reported enjoying ungraded schools somewhat more than schools having self-contained classrooms. The parents of these children generally thought the Bellevue Reading program to be fine and felt very little time was needed for their children to adjust to a new reading program.

Achievement Comparisons, "Mixed" Versus "Pure" Groups

No significant differences were found when a statistical analysis was made at the end of the third year of the Stanford Achievement Test results of children who had remained in one program for three years as compared with children who came into one of the programs after December of the first year but before March of the second year. However, there appeared to be a tendency for the children in the pure groups in all methods to perform somewhat higher on reading related Stanford subtests.

Replication

Replication and extension of the study was done at the first year level in 1968-1969. Lippincott Basic Reading and Sullivan Programmed Reading method groups were added and Phonetic Keys was no longer included. Questionniare feedback was secured from children and teachers.

The replication was undertaken to check on the results of the earlier study with new groups of children and teachers after new-method enthusiasm could be assumed to have dissipated. An additional purpose of the replication was to determine the effect on i/t/a end of first year results when the children were tested with a traditional orthography test.

Limitations applicable to the total study and to the addition of Sullivan and Lippincott are recognized including: (1) the multi-grading in the WIC schools in contrast to the other schools; (2) the nesting of Lippincott, i/t/a and Sullivan in single buildings and the implications of this; (3) the possible inequality of teaching strength; and (4) the possibility of new program enthusiasm and/or new program implementation difficulties with Sullivan and Lippincott.

Although first year extension results are necessarily inconclusive in respect to the long term Sullivan and Lippincott effects, continuation of the replication at the second, third and fourth year is not planned at this time as curriculum decisions as to the District reading program have now been made.

The replication found the original three methods roughly ranked at the end of first grade in 1969 as to mean achievement level much as they had been ranked at the end of the first year in 1966; both for boys and girls. i/t/a Alpha and Lippincott ranked high, WIC ranked second high and Sullivan, i/t/a TO, and Analytic tended to rank low:

	1966	1969
Boys	i/t/a Alpha WIC-Analytic Phonetic Keys	i/t/a Alpha Lippincott WIC-Analytic-Sullivan-i/t/a TO
Girls	i/t/a Alpha WIC Analytic Phonetic	i/t/a Alpha Lippincott WIC i/t/a TO Sullivan-Analytic

There could be the possibility that new method enthusiasm was going strong with Lippincott in its second year but that implementation difficulties had been rather well worked out. Teacher comments would tend to confirm that by the second year, implementation difficulties were few. However, research studies done elsewhere have found Lippincott comparing very favorably with various other approaches.[1] With Sullivan, first year implementation difficulties

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[1] District Committee Studying the Citizen's Reading Report, Final Report to the Board of Trustees. Ravenswood City School District, June 3, 1968.

Dykstra, Robert. Continuation of the Coordinating Center for First-Grade Reading Instruction Programs. Project No. 6-1651. University of Minnesota, 1967, 171 pp.

Dykstra, Robert. The Cooperative Research Program in First Grade Reading Instruction, a report prepared at the University of Minnesota, 1964-65.

Potts, Marion and Savino, Carl. The Relative Achievement of First Graders Under Three Different Reading Programs, The Journal of Educational Research, July-August, 1968, pp. 447-450.

Sims, C. C. McCracken Reading Program, Progress Report to the Barberton (Ohio) Board of Education. Child Study and Guidance Office, Barberton Public Schools, 12 pp.

appeared to be severe. (Teacher comments stress this.) Transition in i/t/a from one symbol system to another had not yet been attempted for most children, and the i/t/a TO test results make apparent the difficulty the i/t/a children had with traditional orthography at this point.

Responses on the pupil questionnaire found children responding with positive feelings about reading, school and their competency 72% of the time and negatively 28% of the time. Ninety percent of the pupils reported feeling that they do well in school. Only half were eager enough about school that they liked to get up and go or would extend time spent in school. Children in the Analytic and Lippincott groups tended to respond more positively in all categories combined and in interest in school. Sullivan children tended to show low interest in reading, but on the average responded more positively as to feeling regarding their own competency.

The teacher questionnaire responses indicated that teachers of all methods other than Analytic saw their present method as having fewer teacher directed lessons, more pupil directed activities, and more student involvement than basal reader methods formerly taught. They all found reading at least "moderately interesting" to teach and most found it "very interesting".

Teachers of Sullivan tended to report fewer class demonstrations and giving more individual attention and support than with the former basal approach. They reported large classes (both have 31), instructional facilities inadequate in relation to the large class size and newness of the program and some materials unusable (the alphabet cards). However, the Sullivan pupils were reported to be fairly encouraged and for the most part making satisfactory progress. The teachers reported feeling more successful with slower students. Only "moderate" feelings of teacher success were related to difficulties in getting materials. They commented that they felt there was not enough straight reading in hard backed books and that fluency was inhibited with too much filling in of blanks. The need for more practice in comprehension was reported. Also the need for additional personnel during reading time was stressed. They liked the introduction of spelling along with reading, that children could write stories easily, that "stigmatizing" grouping is not needed and the fact that children could progress at their own rate.

Words in Color teachers for the most part also reported giving more individual attention and support than with the basal method used formerly. They tended to see WIC as needing more teacher planning and preparation. Although they as a whole reported feeling quite successful in teaching reading, two reported feeling insecure and frustrated with the WIC method. A large majority of this group, however, reported having "very adequate" orientation and support, and adequate instructional facilities.

They found the charts of the greatest value; they tended to find the worksheets and workbooks dull and difficult. Several mentioned

the need for more supplementary reading materials, work books, and work sheets. They tended to report some children as not ready for the WIC formal reading program and thus somewhat discouraged and disinterested. They mentioned the need for readiness materials, another pre-primer, less difficult words, larger print, more distinctly different colors and for pictures to stimulate interest. They liked the "word building" approach, pupil emphasis and involvement, and the student responsibility for learning. They describe the method as intellectually challenging, logically presented, interesting to teach, and as a reasoning rather than memorizing approach. They reported that the WIC approach gives insight into language, permits a child to progress at his own rate, provides more opportunity to observe how pupils learn and has fewer near point visual tasks with the use of charts.

i/t/a teachers reported fewer class demonstrations than with basal. They reported receiving very adequate support and orientation and as having adequate or better facilities. They found materials adequately available and usable. They mentioned the need for some more supplementary materials. Class sizes were large (all above 31). They reported somewhat high percentage of pupils disinterested and making unsatisfactory progress. Many of these appeared to be transfer students.

They particularly liked the self assurance, interest, independence, and writing and spelling freedom of students. They found the stories to have high interest. They liked the more advanced vocabulary. They felt the program provides children with a fundamental knowledge of language construction and that it is phonetic and a total program.

Lippincott teachers tended to report giving more individual attention and support than with their former basal reader approach. They generally reported feeling very successful in the area of teaching reading. They for the most part reported feeling that they received very adequate orientation and support, and that the materials were usable as represented by the publisher. They had relatively small classes (all below 28). They tended to report high percentages of pupils highly interested in reading and few pupils discouraged with their reading progress. They mentioned needing another book at the pre-primer level and that slower children are sometimes bogged down with the long words and difficult vocabulary. They felt that the program does an excellent job in introducing phonics, that the stories are interesting, that the program gives confidence for writing at an earlier age, that it's a challenge even for the best students, that it provides a fundamental knowledge of language construction, that it leads to an early ability to spell, and that the program emphasizes the fact that reading is the child's game and not the teacher's.

The majority of Analytic teachers tended to feel that they had received very adequate orientation and support. There was some degree of problem reported in respect to the usability of the materials as represented. They tended to report average sized

classes, an average number of disinterested pupils, a relatively large percentage of pupils whom they felt were not making satisfactory progress, the need for more phonics and word attack skills, that the subject matter was often outdated, that sight words were introduced that are not commonly used, that it takes a long time for children to become independent readers, and that the content of many stories was irrelevant to the child's background. They commented on the need for phonetic supplementation. They mentioned, on the positive side, the many easy stories which children tended to like, and the helpful supplementary materials such as "word kits" and workbooks.

Teachers who had formerly used various basal reader approaches tended to have found the former methods dull for students and teachers and particularly boy students. They felt that pupils were slow to gain independence. They described the program as having too many sight words, without a background in phonics, stereotyped stories, not much phonics, the stigma of necessary grouping, lack of individualization, lack of early independent reading skills, too much teacher direction, not enough chance for the child to be creative, no basis for attacking new words, lack of self-motivation, and as physically inactive. However, they had liked the large variety of instructional materials available, the ease developed in oral reading, the introduction of material to smaller groups, the practice with fluency, the emphasis on comprehension, the good pictures and the large print, that it made outside reading more readable than i/t/a, that interest level was higher than Lippincott at the pre-primer and primer level, the good teachers manuals, beginning in a text which boosted enthusiasm, that the teacher could report to parents what page the child was working on, that the limited vocabulary had advantages for slow learners, that children liked the stories and seat work, that parents appeared to feel that they knew what was being because "they had been through the same or a similar program", and that there were many available reading books on the same level and particularly the beginning level.

Implications

The general successfulness and the weaknesses and strengths of the programs under the existing conditions of their conduct and from the point of view of achievement, pupil feedback and teacher feedback are reported here. District curriculum and reading specialists are best equipped to consider implications of the results. It would appear, however, that the results support the decisions made in the spring of 1969, in respect to the approaches that are currently being used in the Bellevue Schools, and that the results are consistent with other research showing superior results with the Lippin-

cott and WIC-SRA phonic linguistic approaches.[1]

The Bellevue Public Schools adopted the Lippincott Basic Reading Program beginning in September of 1969 for the first graders in 16 of our 22 elementary schools. The 6 other schools are using Words in Color-SRA as a basic program. In the 1970-71 school year, the programs will go into the second grade, the following year into the third, etc., until all 6 grades have a basic Lippincott or Words in Color-S.R.A. Program.

Important areas have perhaps been identified in which supplementation or modification of these programs can be done to further improve the District's Reading program. The Stanford Achievement Test reading subtest is included in the District uniform testing program in the early spring each year in grades, two, three, four, five and six. It is suggested that the year to year progress and relative progress of children in both of the currently existing programs be followed on the basis of these results.

It is also suggested that pupil and teacher feed-back again be solicited from time to time.

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[1] Bateman, Barbara. Reading: A Controversial View, Research and Rationale, Curriculum Bulletin (School of Education, University of Oregon), XXIII (May 1967) 14 pp.

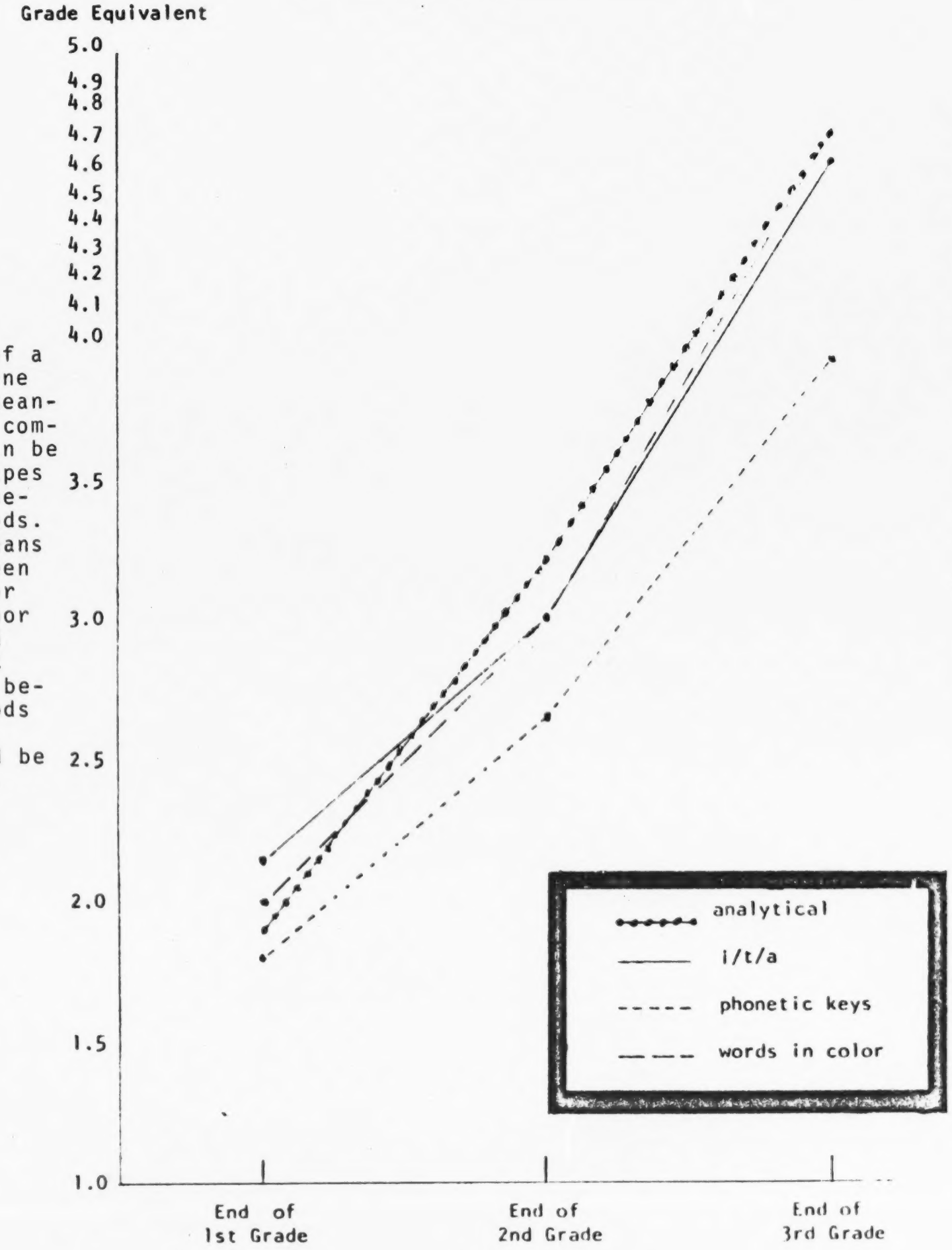
Bliesmer, Emery P. and Yarborough, Betty H. A Comparison of Ten Different Beginning Reading Programs in First Grade, Phi Delta Kappan, June 1965, pp. 500-504.

APPENDIX

APPENDIX A

GRAPHS SHOWING YEAR TO YEAR MEAN STANFORD ACHIEVEMENT TEST SCORES

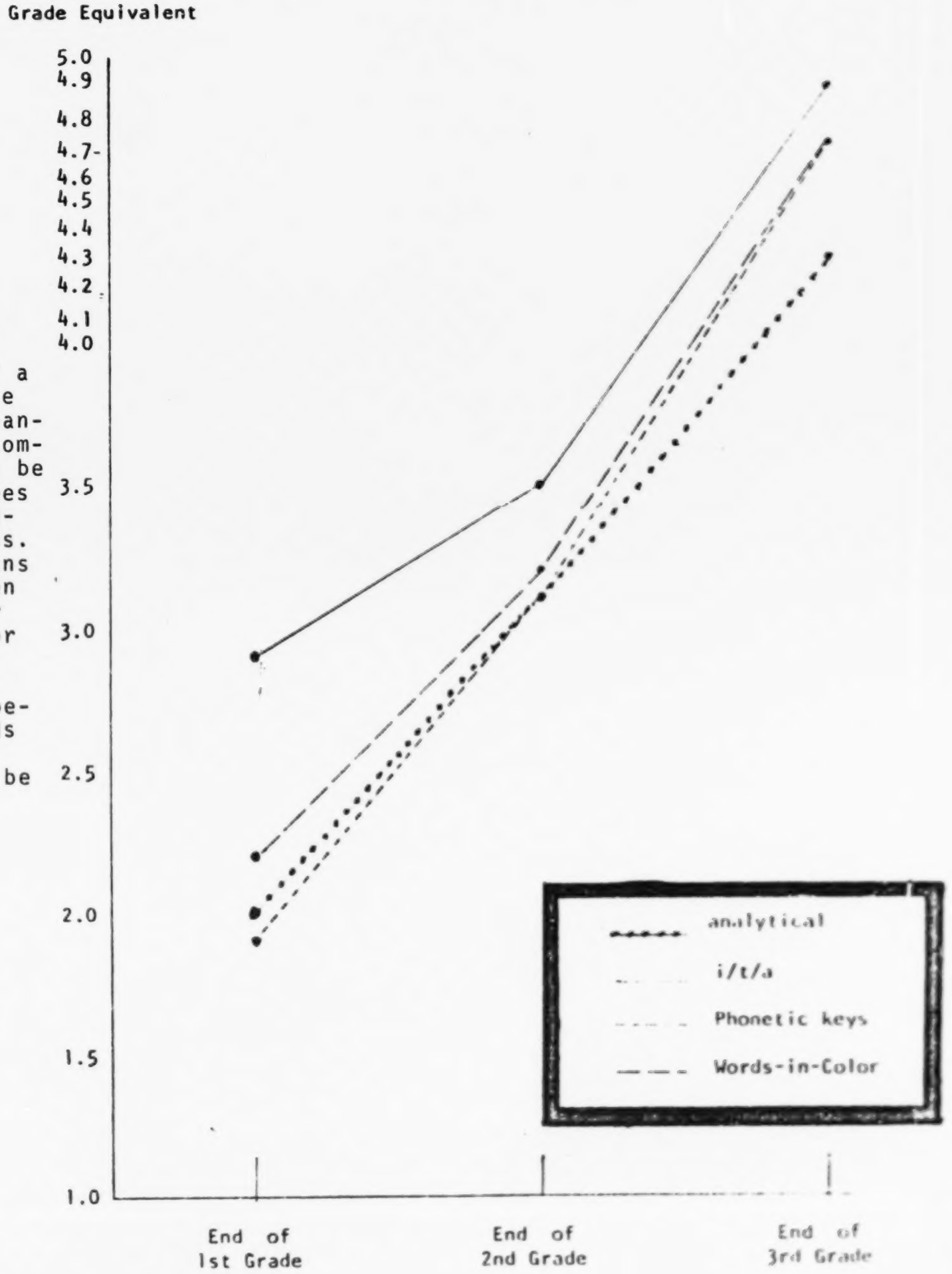
STANFORD ACHIEVEMENT TEST MEAN GRADE
EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD
WORD READING - BOYS



The shape of a curve for one method is meaningful and comparisons can be made of shapes of curves between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.

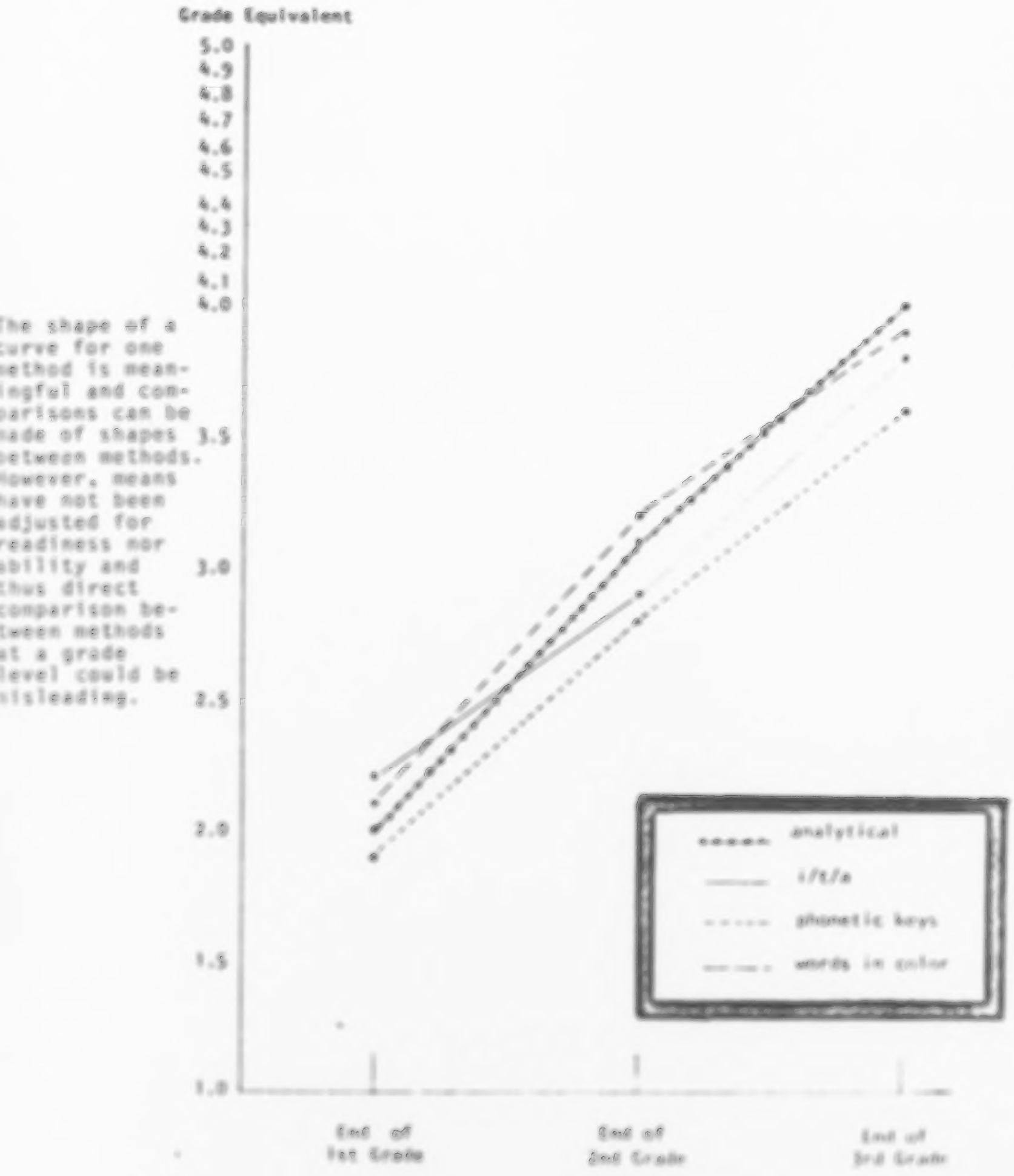
STANFORD ACHIEVEMENT TEST MEAN GRADE EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD

WORD READING - GIRLS



The shape of a curve for one method is meaningful and comparisons can be made of shapes of curves between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.

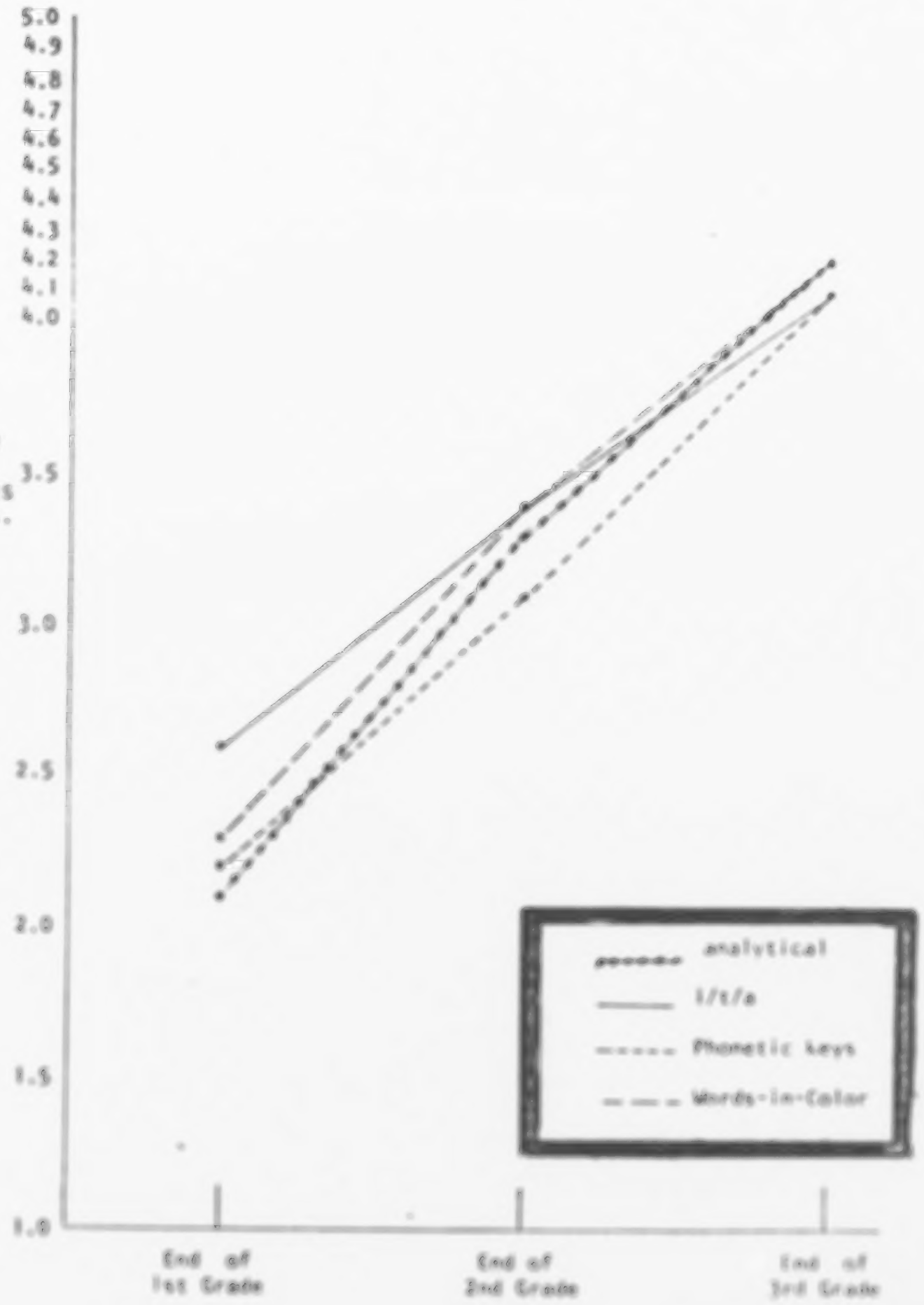
STANFORD ACHIEVEMENT TEST MEAN GRADE EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD
SPELLING - BOYS



The shape of a curve for one method is meaningful and comparisons can be made of shapes between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.

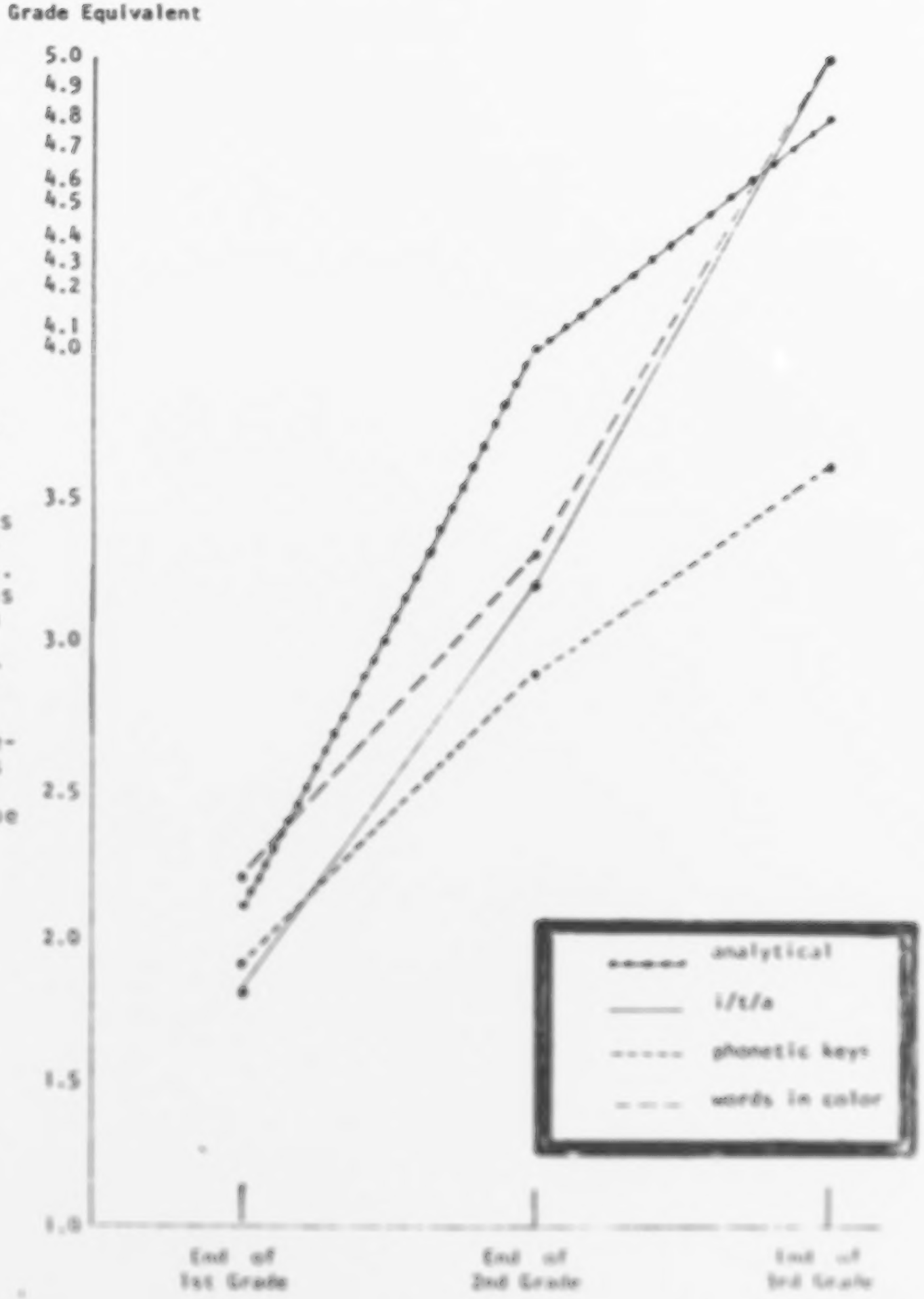
STANFORD ACHIEVEMENT TEST MEAN GRADE EQUIVALENT FROM YEAR TO YEAR WITHIN METHOD

SPELLING - GIRLS



The shape of a curve for one method is meaningful and comparisons can be made of shapes of curves between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.

STANFORD ACHIEVEMENT TEST MEAN GRADE
EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD
ARITHMETIC - BOYS



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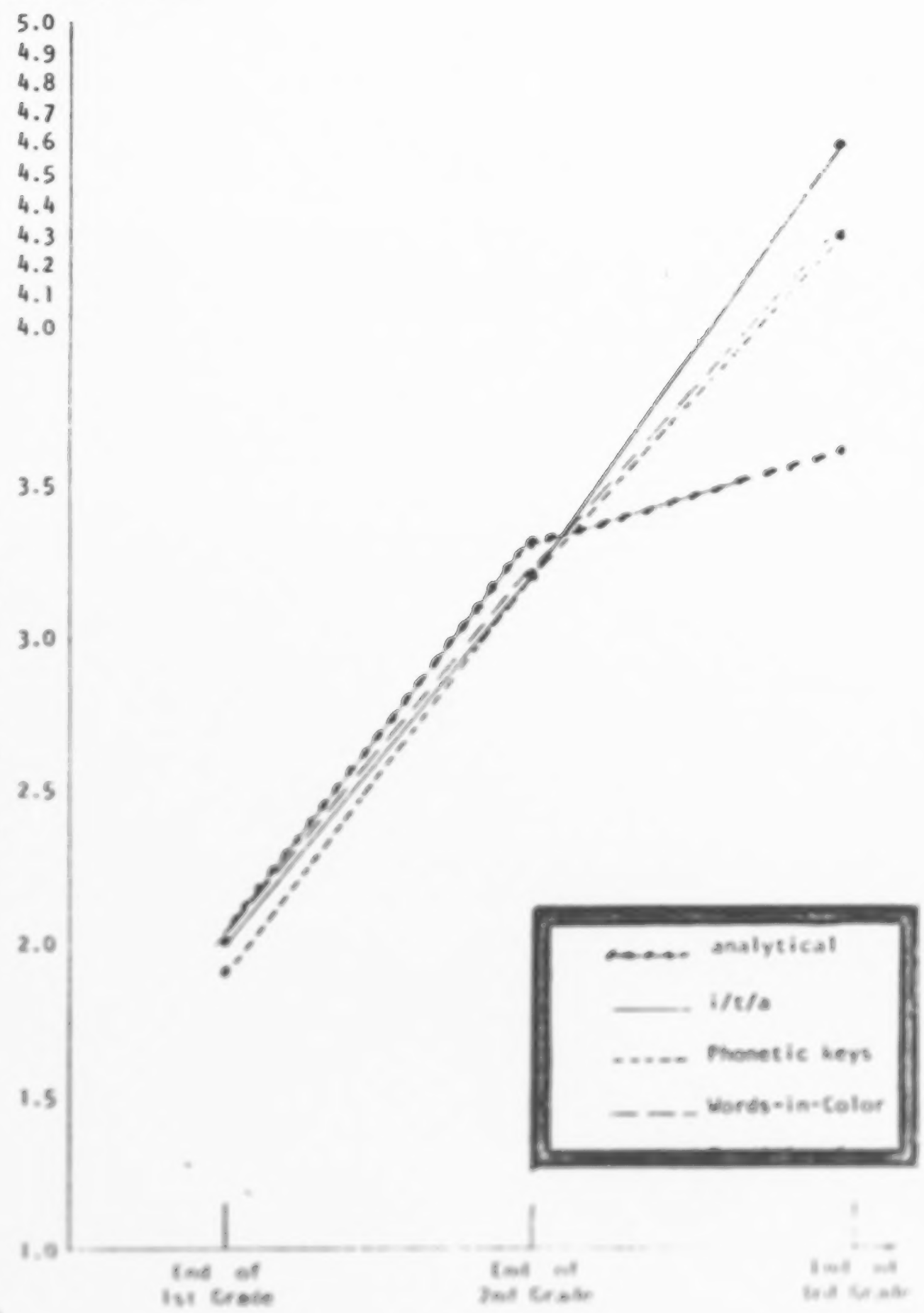
STANFORD ACHIEVEMENT TEST MEAN GRADE
EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD
ARITHMETIC - GIRLS



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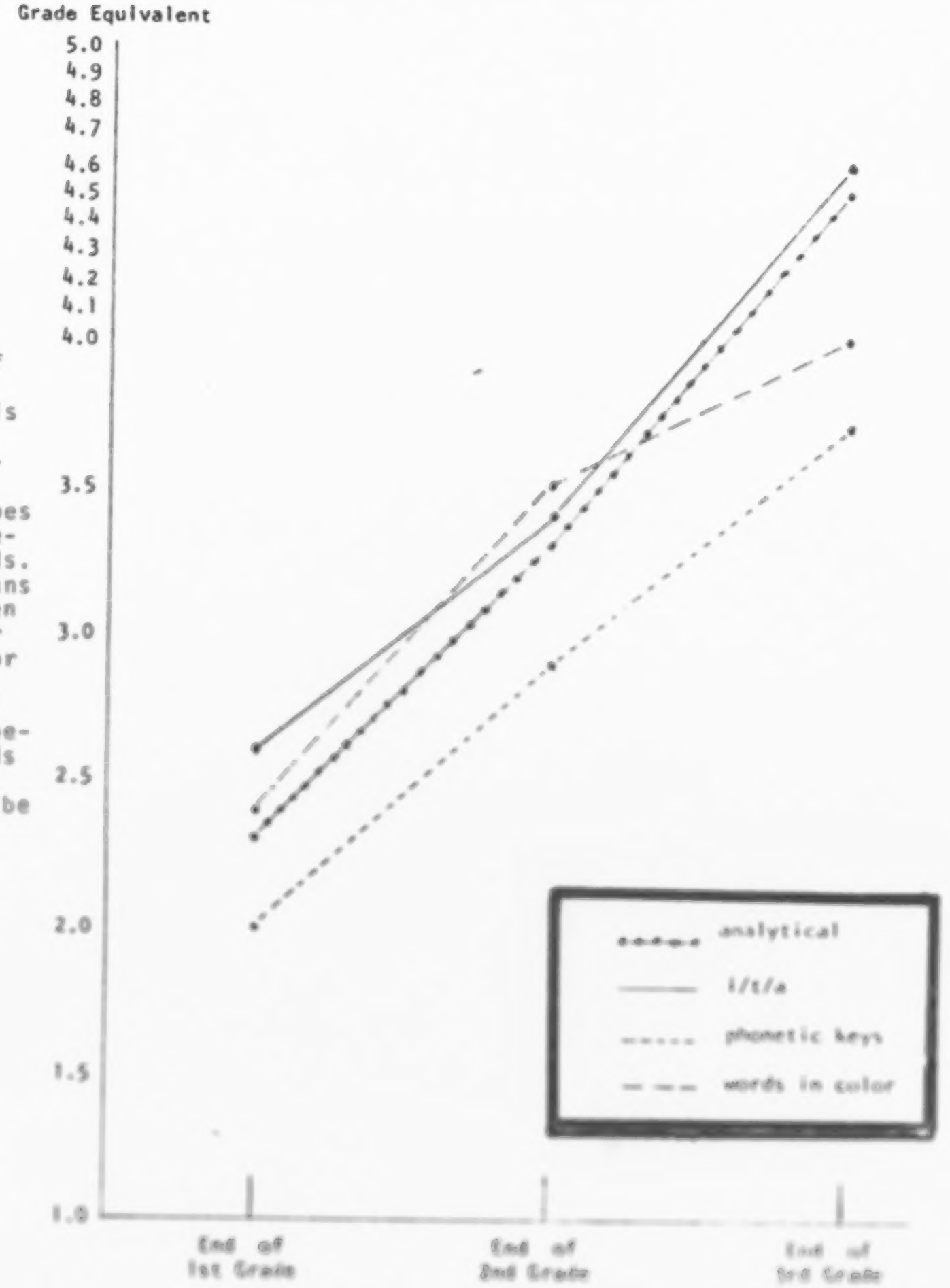
STANFORD ACHIEVEMENT TEST MEAN GRADE
EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD
WORD STUDY SKILLS - BOYS



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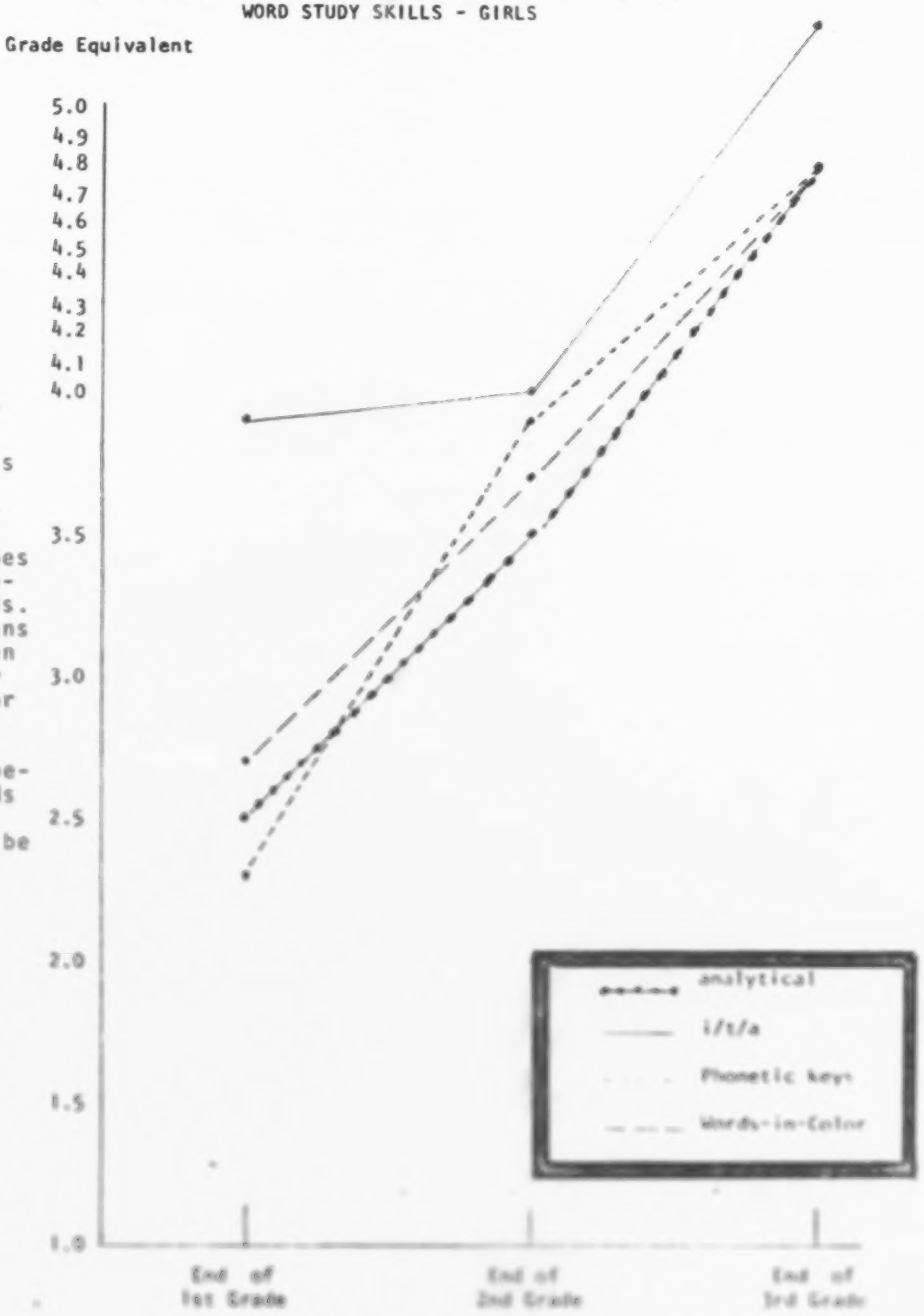
STANFORD ACHIEVEMENT TEST MEAN GRADE
EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD
WORD STUDY SKILLS - GIRLS

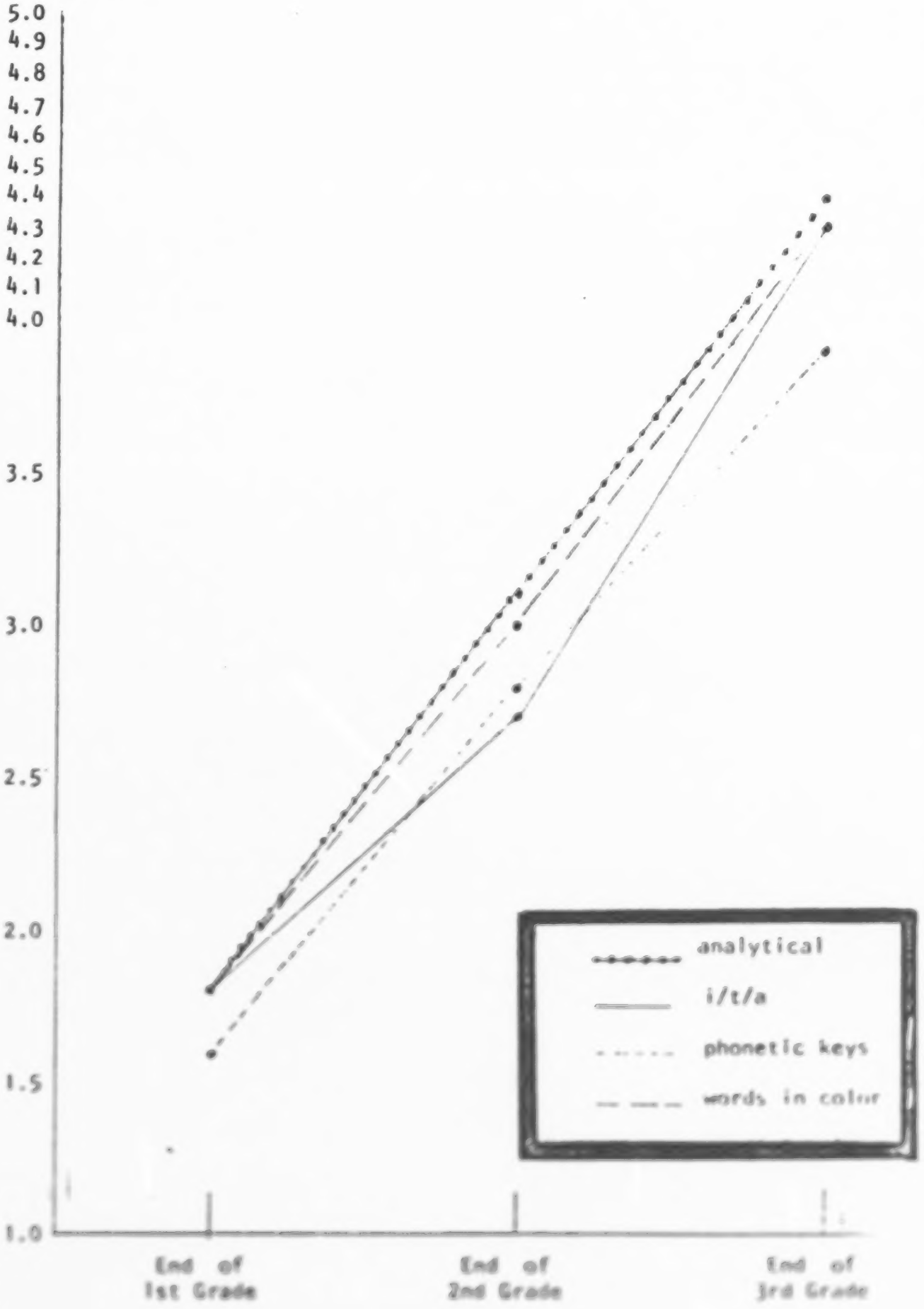


The shape of a curve for one method is meaningful and comparisons can be made of shapes of curves between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.

STANFORD ACHIEVEMENT TEST MEAN GRADE EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD

PARAGRAPH MEANING - BOYS

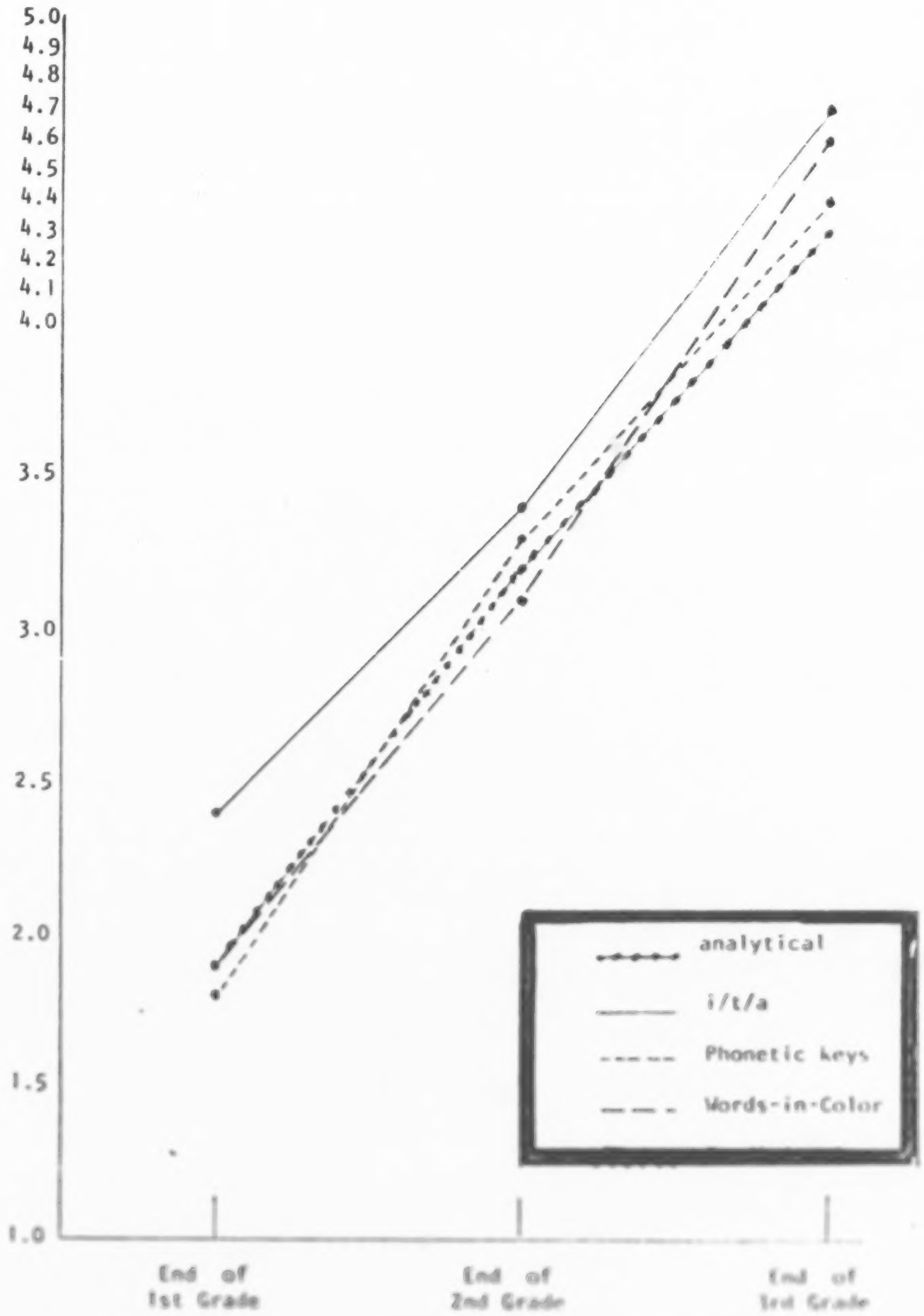
The shape of a curve for one method is meaningful and comparisons can be made of shapes of curves between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.



STANFORD ACHIEVEMENT TEST MEAN GRADE EQUIVALENTS FROM YEAR TO YEAR WITHIN METHOD

PARAGRAPH MEANING - GIRLS

The shape of a curve for one method is meaningful and comparisons can be made of shapes of curves between methods. However, means have not been adjusted for readiness nor ability and thus direct comparison between methods at a grade level could be misleading.



APPENDIX B

CASE STUDY FORMS AND TABULATION OF RESPONSES FOR CHILDREN WHO MOVED FROM ONE PROGRAM TO ANOTHER

LISTING OF CASES AND RELEVANT DATA OF 35 STUDENTS WHO MOVED FROM ONE PROGRAM TO ANOTHER WITHIN BELLEVUE SCHOOL DISTRICT

Pupil	Age	Sex	Grade	Health	Stanford Achievement Test scores-1969 Grade Placement	Materials used before transfer	Materials used after transfer
1	9	F	4	good	3.5	ITA	WIC
2	10	M	4	good	4.8	ITA	WIC
3	9	M	4	good	4.0	ITA	WIC
4	9	F	4	good	5.0	ITA	WIC
5	10	F	4	good	2.7	ITA	WIC
6	9	M	4	good	3.0	ITA	WIC
7	9	M	4	good	5.7	ITA	WIC
8	9	F	4	good	6.4	ITA	WIC
9	10	M	3	poor	2.0	Anal.	WIC
10	10	F	4	good	5.6	Anal.	WIC
11	10	M	4	good	6.0	Anal.	WIC
12	10	M	4		4.8	WIC	ITA
13	10	M	4	good	5.0	WIC	ITA
14	9	F	4	good	5.5	WIC	ITA
15	10	M	4	good	5.5	WIC	Anal.
16	10	M	4	good	5.0	WIC	Anal.
17	9	M	4	good	5.0	WIC	Anal.

Pupil	Age	Sex	Grade	Health	Stanford Achievement Test scores-1969 Grade Placement	Materials used before transfer	Materials used after transfer
18	9	M	3	good	2.1	WIC	Anal.
19	10	M	4	fair	1.5	ITA	Anal.
20	9	M	4		3.0	ITA	Anal.
21	9	F	4	good	3.0	ITA	Anal.
22	8	F	3		3.5	ITA	Anal.
23	10	F	4	good	4.7	ITA	Anal.
24	8	M	3		3.1	ITA	Anal.
25	9	M	4		4.9	ITA	Anal.
26	10	F	4	good	4.0	ITA	Anal.
27	10	F	4	good	6.0	ITA	Anal.
28	10	M	4		6.1	ITA	Anal.
29	10	F	4	good	5.0	ITA	Anal.
30	8	F	3	good	3.1	ITA	Anal.
31	9	M	3-4	good	2.2	ITA	Anal.
32	10	F	4	good	2.4	ITA	Anal.
33	10	F	4	good	4.0	ITA	Anal.
34	10	F	4	fair	4.1	WIC	WIC
35	10	M	4	good	3.1	Anal.	Anal.

CHILDRENS QUESTIONNAIRE

FORM AND TABULATION OF RESPONSES

A

INTEREST IN READING

1. Do you sometimes ask to read to your mother or father or someone in your family?

20 Yes

14 No

2. What is your favorite subject in school?

17 Math

9 Reading

3 Art

2 Spelling

1 Science

1 P.E.

1 None

What is your least favorite?

8 English

8 Math

6 Social Studies

6 Spelling

1 Science

1 Writing

1 Reading

3. Did you take a reading book home this week?

15 Yes

13 No

4. Would you like to have more time to read at school?

29 Yes

6 No

B

INTEREST IN SCHOOL

1. Do you usually like to get up in the morning and come to school?

17 Usually

13 Sometimes

5 Not very often

2. Would you like to go to school part of the summer?

12 Yes

23 No

3. Would you like to have the school day

Shorter? 4

Longer? 1

Just the same? 30

4. Do you like school?

2 Not very much

13 Somewhat

20 Very much

C

FEELINGS OF COMPETENCE IN READING

1. Can you usually figure out new words by yourself in your reading book?

33 Yes

2 No

2. Do you need more teacher help when you are working in reading?

8 Yes

27 No

3. Are you a good reader?

13 Very good

19 Fairly good

3 Not very good

D

COMPETENCY IN SCHOOL

1. Do you do well in school?

12 Very well

21 Fairly well

2 Not ver well

E

1. Do you remember when you moved to this school?

34 Yes

1 No

2. Was it hard to read when you first came here?

10 Yes

25 No

3. Which school did you enjoy most?

10 Bellewood

5 Stevenson

5 Ardmore

3. Cont.

3 Lake Heights

3 Surrey Downs

2 Clyde Hill

1 Newport Hills

1 Ashwood

1 Wilburton

1 Medina

3 None

PARENT INTERVIEW FORM AND TABULATION OF RESPONSES

We are interested in how you feel about Bellevue Public Schools' Reading Program.

18 O.K.

2 Undecided

4 Needs Improvement

Did you notice any particular change in your child when you moved?

14 Yes

18 No

How long did it take your child to adjust to the new program?

23 Very little time

6 Quite some time

3 Didn't

Did he recieve any special help?

22 No

School Help?

10 Yes

Outside Help?

3 Yes

TEACHER COMMENTS

Did you give special reading help?

19 No

4 Yes

Was (student) ever referred to the district reading laboratory?

24 No

Is (student) in the district reading laboratory now?

25 No

Has he ever been in the district reading laboratory?

25 No

APPENDIX C

QUESTIONNAIRE FORMS USED IN THE FIRST YEAR REPLICATION

BELLEVUE READING METHODS STUDY
(Replication and Extension)

PUPIL ATTITUDES TOWARD READING (Teacher's Copy)

(Questions to be read to pupils. Pupils will mark an X by yes or no on the accompanying answer sheet.)

Interest in Reading

1. Do you sometimes ask to read to your mother or father or someone in your family? — Yes _____ No _____

2. Is reading your favorite subject? — Yes _____ No _____

3. Do you take books home to read? — Yes _____ No _____

4. Would you like to have more time to read at school? — Yes _____ No _____

B

Interest in School

5. Do you usually like to get up in the morning and come to school? — Yes _____ No _____

6. Would you like to go to school part of the summer? — Yes _____ No _____

7. Do you wish the school day were shorter? — Yes _____ No _____

C

Feelings of Competency

8. Can you usually figure out new words by yourself? — Yes _____ No _____

9. Do you need more help with your reading? Yes _____
No _____

10. Are you a good reader? Yes _____
No _____

D

Competency in School

11. Do you do well in school? Yes _____
No _____

AGE_____TEACHER_____GRADE_____

BELLEVUE READING METHODS STUDY
PUPIL ATTITUDES

Pupil Answer Sheet

Item

1. Yes _____
   No _____

2. Yes _____
   No _____

3. Yes _____
   No _____

4. Yes _____
   No _____

5. Yes _____
   No _____

6. Yes _____
   No _____

7. Yes _____
   No _____

8. Yes _____
   No _____

9. Yes _____
   No _____

10. Yes _____
    No _____

11. Yes _____
    No _____

BELLEVUE READING METHODS STUDY
(Replication and Extension)

Teacher Attitude Questionnaire

A replication and extension of the District Reading Study is being conducted at the first grade level this year. As a part of this study, staff attitudes toward various aspects and effects of their selected reading programs are being assessed. In order to help accomplish this task, will you please complete the following questionnaire. All responses should be given by checking (✓) or filling in the appropriate blanks.

1. What method are you presently using for teaching reading? Tie as closely as possible to a single identifiable method (e.g. Basal Reader, I.T.A., Words in Color, Lippencott or Sullivan).

_____

2. In questions 3 and 4 you will be asked to compare the method of teaching reading you are currently using with another method which you have used in the past. The other method you are using for comparison is _____

_____

If you have used no other method or have not taught first grade before this year, please check here _____ and do not complete items numbered 3, 4, 16 and 18.

3. If you have used another method, please indicate, in contrast to the method previously used, how much your current method utilizes the following:

a. Teacher directed lessons.
More _____
The same _____
Fewer _____

b. Individual attention and support by teacher to pupil.
More _____
The same _____
Less _____

c. Class demonstrations.
More _____
The same _____
Fewer _____

d. Teacher planning and preparation.
More _____
The same _____
Less _____

e. Pupil directed activities.
More _____
The same _____
Fewer _____

4. In relation to the reading method previously used, do you find a higher or lower degree of student involvement with your present method?

   Higher _____
   Same _____
   Lower _____

   Comments _____

   _____

   _____

   (Use back of page if additional space is needed)

5. Using your current method, how successful do you feel in the area of teaching reading?

   Very successful _____
   Moderately successful _____
   Not successful _____

   Comments _____

   _____

   _____

6. Do you feel that you receive adequate orientation and support in respect to your reading program?

   Very adequate _____
   Moderately adequate _____
   Inadequate _____

   Comments _____

   _____

   _____

7. Do you have adequate instructional facilities for carrying out your reading program?

   Very adequate _____
   Moderately adequate _____
   Inadequate _____

   Comments _____

   _____

   _____

8. Are the necessary instructional materials readily available?

   Usually _____
   Sometimes _____
   Rarely _____

   Comments _____

   _____

   _____

9. Are the materials as usable as represented by the publisher?

Comments _____

_____

_____

Most are _____
Some are _____
Few are _____

10. Is reading interesting for you to teach?

Comments _____

_____

_____

Very interesting_____
Moderately interesting_____
Not interesting_____

11. How many first grade pupils are in your room? _____

12. Estimate the percentage of your pupils who are very interested in reading?

Comments _____

_____

91% to 100% _____
71% to 90% _____
51% to 70% _____
21% to 50% _____
0% to 20% _____

13. How many of your pupils are apparently quite discouraged with their reading progress?

Comments _____

_____

None _____
1 - 3 _____
4 - 6 _____
7 - 10 _____
More than 10_____

14. In your estimation, how many of your pupils are not making satisfactory progress in reading?

Comments _____

_____

None _____
1 - 3 _____
4 - 6 _____
7 - 10 _____
More than 10_____

15. Please describe any weaknesses with the instructional method you are currently using?

Comments _____

_____

_____

16. Please describe any weaknesses with the other method, the one formerly used.

Comments _____

_____

_____

_____

17. Are there characteristics of the current method which you particularly like? Please describe.

_____

_____

_____

_____

_____

18. Were there characteristics of the previously used method which you particularly liked? Please describe.

_____

_____

_____

_____